

U.S. Department of Education
Green Ribbon Schools 2012

For Public Schools only: (Check all that apply) [] Charter [] Title I [] Magnet [] Choice

Name of Principal –Ms. Suzanne J. Cooley

Official School Name - Bernards High School

School Mailing Address – 25 Olcott Avenue, Bernardsville, NJ 07924

County – Somerset

State School Code Number* 35-4815

Telephone (908) 204-1930 x2108 Fax (908) 953-0453

Web site/URL – SHSD.org

E-mail scooley@shsd.org

I have reviewed the information in this application, including the award and eligibility requirements on page 2-4, and certify that to the best of my knowledge all information is accurate.


(Principal's Signature)

Date 3/14/12

Name of Superintendent* Mr. Peter J. Miller

District Name*Somerset Hills School District

Tel.(908) 630-3011

I have reviewed the information in this application, including the award and eligibility requirements on page 2-4, and certify that to the best of my knowledge all information is accurate. I concur that this is one of the highest performing green school applicants in our state.


(Superintendent's Signature)

Date 3/16/12

**Private Schools: If the information requested is not applicable, write N/A in the space.*

Bernards High School is very proud of its efforts to create a green, sustainable facility. Our sustainability programs have engaged students, teachers, administrators and staff together to significantly decrease our energy consumption, reduce our carbon footprint and increase literacy and awareness of environmental concerns. In June of 2008, the Somerset Hills Board of Education approved a Five-Year District Strategic Plan. The Strategic Plan was the result of a year long process of research and evaluation by over 100 members of the Somerset Hills Community, and included the goals of implementing a comprehensive "Green Initiative" to promote high performance, green, sustainable facilities; expanding students' environmental awareness and community service relating to caring for the environment; and developing an integrated environmental education curriculum. Bernards High School (BHS) has implemented these action plans and continues to monitor, measure, evaluate and improve its goal of creating a green and sustainable school.

In creating a school environment that is worthy of a Green Ribbon School award, I believe that the goal must be to better utilize the resources that we have on hand. At Bernards High School, this goal is realized through recycling, reusing, composting and conserving energy. Statistics show that 30% of the energy consumed in schools is wasted and our ultimate goal in this regard is to identify and eliminate energy waste. With the overwhelming source of air pollution in the United States being due to the production, distribution and disposal of energy, working towards eliminating energy waste has been a priority. Towards this end, BHS has implemented a number of measures, including infrastructure upgrades, low and no cost behavioral strategies, and a plan to install solar panels on the roof this summer. These measures have already resulted in a significant reduction in energy use and of our carbon footprint. I commend BHS for its achievement of 12% (and counting!) reduction in energy consumption and its contributions toward achieving an Energy Star® Label for the School District.

Our Green Initiatives, while benefitting environmental and sustainability efforts, have also created many new opportunities for our students. Through our environmental science curriculum offerings, students have been able to experience first hand the use of scientific methods in measuring and improving the environment. The Schools for Energy Efficiency (SEE) program has actively engaged students in projects in which they seek out opportunities to improve energy efficiency. Our very active student Green Team has organized activities and events - such as composting, recycling, organic gardening and energy efficiency programs - that not only promote sustainability but also engage large segments of the student body. The Green Team has come up with some creative reward programs for students who commit to green initiatives. For example, reusable water bottles are given to every student in the grade that wins the Earth Week recycling contest. Students who win the "Don't Drive to School Challenge" during Earth Week are given prizes of alternative forms of transportation (scooters, roller blades, etc.). Extra-curricular clubs and activities offer students additional opportunities to actively engage in environmentally themed projects in conjunction with the Borough, elementary and middle schools, and other schools in the country. For example, the Borough of Bernardsville Green Team partnered with the High School to hold an electronic recycling day last April. It was so successful that it will be repeated this year. As these opportunities have increased, we are

seeing more and more of our students engage in independent, environmentally-themed projects and express an interest in post-secondary studies related to the environment.

As part of the "Green Initiative", The District as a whole has participated in a grant-funded Comprehensive Energy Audit, an Energy Savings Improvement Program (ESIP), the NJ Board of Public Utilities "Pay for Performance" (P4P) program, North American Power Partners Demand Response Program and the Schools for Energy Efficiency (SEE) Program. The District also instituted a board-approved energy policy aimed at reducing energy waste and increasing awareness of environmental concerns within the buildings. While these measures are district-wide, the results at the high school building are independently monitored, measured and reported so that all BHS staff and students are actively engaged and involved.

In working to achieve our goals of reducing waste and lowering our carbon footprint, we realize that we have created an entirely new culture within our school in which the theme of environmental stewardship cuts across many paths. We are extremely proud to consider ourselves a "Green" school that cares for the environment and teaches our students to do the same. We would be equally proud to also have the privilege of calling ourselves a "Green Ribbon School".

Nominating Authority's Certifications

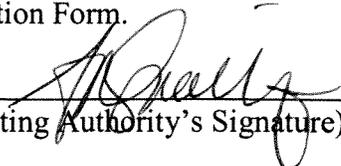
The signature by the Nominating Authority on this page certifies that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct.

1. The school has some configuration that includes one or more of grades K-12. (Schools on the same campus with one principal, even a K-12 school, must apply as an entire school.)
2. The school achieves or is one of those overseen by the Nominating Authority which comes the closest to achieving the goals of all three green Ribbon Pillars:
1) environmental impact and energy efficiency; 2) healthy school environments; and
3) environmental and sustainability education.
3. The Nominating Authority has evaluated the school and selected it for submission to the U.S. Department of Education from among those schools overseen by the Nominating Authority which have applied for a Green Ribbon, based on *documented achievement* toward the three Green School Pillars and Elements.
4. The school meets all applicable federal civil rights and federal, state, tribal and local health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency New Jersey Department of Education

Name of Nominating Authority Deputy Commissioner Andrew Smarick
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application, including the award and eligibility requirements on pages 2-4, and certify, to the best of my knowledge through a documentary verification assessment, that the school meets the provisions in this Part of the Nominee Presentation Form.

 Date 3/21/12
(Nominating Authority's Signature)

Bernard HS– 02		New Jersey 2012 Green Ribbon Schools Scoring Matrix			Total >	59.63
School Profile: Green School Programs and Awards 10%				Score	Comments	
Cross Cutting Descriptors	1 pt.	2 to 3 pts.	4 to 5 pts.			
Participation in green school programs and/or progress toward a BOE approved green strategic plan (current) Maximum score = 5 points	School participates in one program that benchmarks progress. i.e. Eco-Schools, GSLLI, PLT Green School, NJPALS, Cloud Institute	School participates in a few programs that benchmarks progress. i.e. Eco-Schools, GSLLI, PLT Green School, NJPALS, Cloud Institute	School participates in a number of programs that benchmarks progress. i.e. Eco-Schools, GSLLI, PLT Green School, NJPALS, Cloud Institute, and a BOE approved green strategic plan	2.60		
Awards for environmental and sustainability efforts previously received Maximum score = 5 points	School has received one award for environmental and sustainability efforts. i.e. NJ DEP Recycling Award, Eco-Schools, PLT Green School!	School has received a few awards for environmental and sustainability efforts. NJ DEP Recycling Award, Eco-Schools, PLT Green School!	School has received numerous awards for environmental and sustainability efforts. i.e. NJ DEP Recycling Award, Eco-Schools, PLT Green School!	1.60		
Pillar I: Environmental impact and energy efficiency 30%						
on, water, waste, and hazardous waste impacts						
Element Descriptors	1 to 5 pts.	6 to 10 pts.	11 to 15 pts.			
Element IA: Zero greenhouse gas (GHG) emissions - Improved energy conservation/energy-efficient building Maximum score = 15 points	School demonstrates some reduced energy use	School has an Energy Star rating and an Energy Master Plan; demonstrates substantial reductions in electricity, heating, energy use and carbon footprint; generates or purchases some renewable energy; has green building recognition for some new, renovated and/or existing buildings at minimum Silver level or equivalent; measures and offsets some of its remaining carbon footprint.	School has an Energy Master Plan; is Energy Star rated above 90; demonstrates reductions from baseline in electricity, heating and carbon footprint of 35% or more; >50% of energy use comes from renewable sources; offsets a <i>substantial</i> amount of its remaining footprint; has received green building recognition at the Gold or higher for all new, renovated, and existing buildings.	10.00		
Element Descriptors	1 pt.	2 to 3 pts.	4 to 5 pts.			
Element IB: Improved water quality, efficiency, and conservation i.e.. Water, Grounds Maximum score = 5 points	The school protects its water from contaminants; cleans its drinking water fountains and controls lead in drinking water.	In addition, the school has smart irrigation and landscaping that is water-efficient; conducts annual water audits and controls leaks; installs <i>some</i> water-conserving fixtures and/or appliances (e.g. waterless urinals, dual-flush toilets, appliances); and can demonstrate a <i>modest</i> amount of reduction in water-use compared to baseline.	In addition, the school demonstrates a <i>substantial</i> amount of reduction in water-use compared to baseline; uses <i>only</i> alternative water sources for irrigation (e.g. gray water; rainwater harvesting); provides <i>only</i> water-efficient fixtures; and uses other creative measures for protecting and conserving water at the school site (e.g. bioswales for controlling runoff).	3.43		
Element Descriptors	1 pt.	2 to 3 pts.	4 to 5 pts.			
Element IC: Reduced waste production and improved recycling and composting programs i.e. Waste, Hazardous waste Maximum score = 5 points	School monitors its hazardous waste and disposes of it as required by state law; has a recycling program that diverts 20% of its solid waste (but no organics/ compost); purchases some paper with <i>some</i> recycled content; uses <i>some</i> "third-party certified" cleaning products; and describes a few creative ways the school community practices the 4Rs.	In addition, school also has a pollution prevention approach to hazardous chemicals; recycles computer and electronics responsibly; purchases some electronics with E-PEAT certification; uses <i>substantial</i> amount of "third-party certified" cleaning products; has a recycling program that diverts 35% of its solid waste (some organics/ compost, such as yard waste); purchases <i>substantial</i> amounts of paper with recycled and chlorine-free content.	School also has made <i>substantial</i> , measured progress towards a "zero waste" goal; has a recycling program that diverts 50% or more of its solid waste (including organics like yard waste and food waste); purchases <i>substantial</i> amounts of paper with > 30% recycled content, and chlorine-free; has an environmentally-preferable purchasing policy and a hazardous waste management policy that reduces and prevents solid and hazardous wastes; uses 100% "third-party certified" cleaning products (not including disinfectants); has a custodial program that meets "green" institutional services standards; and describes several creative ways the school community practices the 4Rs.	3.17		
Element Descriptors	1 pt.	2 to 3 pts.	4 to 5 pts.			
Element ID: Use of alternative transportation to, during, and from school Maximum score = 5 points	School has programs in place to promote more efficient and healthier transportation, including designated carpool stalls, anti-idling policy, no loading/unloading near air intakes; has some percentage of students that do not drive in a single vehicle to school, and has some means of connecting students to the schoolyard.	In addition, school has a high percentage of students that do not drive in a single vehicle to school; participates in Safe Routes to Schools and identifies safe pedestrian routes; adopts a policy to promote active transportation; and has several means of connecting students to the schoolyard.	In addition, school has alternative-fuel buses and other creative means of promoting alternative transportation.	3.50		

Pillar II: Healthy School Environments – 30%				
the health and performance of students and staff				
Element Descriptors	1 to 5 pts.	6 to 10 pts.	11 to 15 pts.	
Element 2A: An integrated school environmental health program i.e. Integrated Pest Management, Ventilation, Contaminant controls, Asthma control, Indoor air quality, Moisture control, Chemical management Maximum = 15 points	School complies with all relevant state laws related to pesticides, mercury, tobacco and other hazardous materials; ensures good ventilation; keeps relative humidity below 60%; contains no mold; has CO alarms and inventory of appliances; complies with radon laws.	In addition, school tests classrooms for radon within last 24 months; implements an Integrated Pest Management plan that eliminates pesticides; implements an Indoor Air Quality Program equivalent to Tools for Schools; uses "third-party certified" cleaning products; actively manages chemicals; and describes other measures of student and staff health and safety.	School has completed everything in this section and uses an aggressive approach to eliminating environmental health and safety hazards (physical, biological, chemical, natural).	12.17
Element Descriptors	1 to 5 pts.	6 to 10 pts.	11 to 15 pts.	
Element 2B: High standards of nutrition, fitness, and quantity of quality outdoor time i.e. Fitness and outdoor time, Food and Nutrition, Ultra Violet (UV) safety, Health Services, School Climate and Safety Maximum = 15 points	School conducts at least an average of 120 minutes per week per student of physical education with a reasonable amount conducted outdoors; has an on-site food garden; and participates in some nutrition program.	School also participates in a farm-to-school program; participates in USDA or other nutrition program at a high level; students participate in Sunwise-type program; <i>some</i> food purchased is certified organic; food from school garden is eaten by students.	School also purchases a <i>substantial amount of</i> food certified organic; reduced UV and heat exposure; more than 50% of physical education annually takes place outdoors; and undertakes other measures to promote healthy nutrition, and high quality outdoor time.	5.83
Pillar III: Environmental and Sustainability Education – 30%				
graduates are environmentally and sustainability literate				
Element Descriptors	1 to 3 pts.	4 to 6 pts.	7 to 10 pts.	
Element 3A: Interdisciplinary learning about the key relationships between dynamic environmental, energy and human systems Maximum = 10 points	School integrates E/S concepts into many subjects; integrates E/S into some class and school assessments; >50% of teachers participate in occasional E/S professional development opportunities; enrolls at least 5% of the school's eligible graduates in AP environmental science during their high school career.	School focuses E/S literacy efforts on understanding the key relationships between dynamic environmental, social, and economic systems; incorporates E/S themes and topics in many grades, subjects, classroom and school assessments; >75% of teachers participate in one or more E/S professional development opportunities annually.	School has an E/S graduation/matriculation requirement which is focused on understanding the key relationships between dynamic environmental, social, and economic systems; fully integrated E/S into the curricula scope and sequence of learning and matriculation standards for <i>all</i> grades; enrolls >5% of the school's eligible graduates in AP environmental science during their high school career.	5.33
Element Descriptors	1 to 3 pts.	4 to 6 pts.	7 to 10 pts.	
Element 3B: Use of the environment and sustainability (E/S) to develop Science, Technology, Engineering, and Mathematics (STEM) content, knowledge, and thinking skills to prepare graduates for 21st century technology-driven economy Maximum = 10 points	School <i>rarely</i> integrates E/S into science courses; makes <i>few</i> connections to E/S careers; and provides <i>little</i> evidence about links to STEM.	School <i>sometimes</i> integrates E/S into science courses; makes <i>some</i> connections to E/S careers; and provides <i>some</i> additional evidence about links to STEM.	School <i>frequently</i> integrates E/S concepts into STEM courses; curricula makes <i>many</i> connections throughout to E/S careers, career tech/green jobs; offers E/S related CTE courses; and provides a substantial amount of additional evidence about links to STEM education.	6.00
Element Descriptors	1 to 3 pts.	4 to 6 pts.	7 to 10 pts.	
Element 3C: Development and application of civic engagement knowledge and skills Maximum = 10 points	School has civic projects related to environment and sustainability in <i>some</i> grades; occasional meaningful outdoor learning experiences in a <i>few</i> grades; and a <i>few</i> community partnerships, perhaps only involving donations of funds/supplies.	In addition, school employs best practices for inquiry-based, hands-on, experiential learning in both their civic and outdoor experiences; projects are not "one-off" but instead are in-depth service learning and civic projects fully integrated with school's academic coursework.	School receives full credit when <i>all</i> grades have civic projects; when <i>all</i> grades have meaningful outdoor learning experiences; and when the <i>quality and quantity</i> of community partnerships <i>results</i> in sustainability advances at the <i>school, other schools and the wider community</i> . Higher points for inspiring and creative projects and partnerships.	6.00

School Contact Information

School Name: *Bernards High School*

Street Address: *25 Olcott Avenue*

City: *Bernardsville* State: *New Jersey* Zip: *07924*

School Website: *www.shsd.org*

Principal: *Suzanne Cooley*

First Name: *Suzanne* Last Name: *Cooley*

Email: *scooley@shsd.org*

Address: *25 Olcott Avenue, Bernardsville, NJ 07924*

Phone Number: *908 – 204 – 1930 x 2108*

Lead Applicant (if different from principal)

First Name: *Nancy* Last Name: *Hunter* Title: *Business Administrator*

Email: *nhunter@shsd.org* Phone Number: *(908) 204-1930 Ext 1117*

Level

Elementary (PK -- 5 or 6) K -- 8 Middle (6 -- 8 or 9) High (9 or 10 -- 12) Other (state)

School Type Public Private/Independent

District and Code -- District Name: *Somerset Hills School District* Code: *35-4815*

SCHOOL PROFILE: GREEN SCHOOL PROGRAM AND AWARDS

Is your school participating in a local, state, or nationally recognized green school program? If yes, please explain what program and what level you are currently at (for example, local Green Strategic Plan, Eco Schools USA, PLT Green Schools, NJPALS, Green Schools Leadership Institute, Cloud Institute, NJ Sustainable Schools Project). Yes

- 1. A District-wide, NJ legislated, Energy Savings Improvement Program (ESIP). Ameresco, a NJ qualified Energy Services Company (ESCO), entered into a 15 year Energy Savings Improvement Program (ESIP) with SHSD. The ESIP will generate energy savings from existing operational budgets to self-fund critical capital improvement needs throughout the District. No capital dollar contributions from the District were required to make these energy saving improvements. Upon completion of the ESIP, the district will realize over 23% in savings off the District's total annual operational spend. Additionally, the district is expected to receive over \$520,000 in energy rebates/incentives from the "Pay-for-Performance" program; an energy incentive program sponsored by the NJ BPU. Environmental benefits include significant reduction of the district's carbon footprint and greenhouse gas emissions. The annual green benefits equal the reduction of over 10,000 tons of CO2 and the removal of 1,784 cars from the road. The project also helps reduce the need for energy from traditional power plants fueled by fossil fuels.*
- 2. The District is a participant in the NJ Board of Public utilities "Pay-for-Performance" program (P4P). Under the P4P program, the District has two completed and BPU approved Energy Reduction Plans; one for Bernards High School, and one for Bernardsville Middle School.*
- 3. Since December 2009, the District has participated in the Schools for Energy Efficiency Program (SEE). SEE is a comprehensive program for K-12 schools to save energy and money by changing behavior throughout the district. To date, the district has achieved a reduction of 11% in energy consumption, avoided utility costs of \$203,510.00 and earned two prestigious Energy Star Awards. Specifically, the High School avoided costs of \$128,601.00 and reduced energy consumption by 11%. These achievements were attained through engaging students, teachers, administrators and custodians together, in low and no cost strategies, to decrease energy consumption, reduce carbon footprint and increase literacy and awareness of energy and environmental concerns.*
- 4. The High School building participates in North America Power Partners' (NAPP) Demand Response program, which provides a recurring revenue stream to the Somerset Hills School District by allowing NAPP to use the District's electrical capacity to meet the capacity needs of the energy market. Demand response allows the District to manage electrical usage and plan for Demand Response events and tests called for by the Regional Transmission Organization, PJM through North America Power Partners, LLC. With Demand response in place, the District is taking steps to reduce the possible likelihood of brownouts /blackouts in the community. From an Environmental standpoint, the District is reducing its Carbon Emissions Footprint as they reduce electric usage. Electricity reduction would reduce the GHG emissions as well as the need to rely on generation plants or place additional stress on the electrical grid at times of High or Peak Demand.*
- 5. The School District entered into a shared initiative with the Somerset County Improvement Authority (SCIA) to install solar panels on the roof of the High School and the elementary school. Approximately 80% of the High School roof will be covered. It is estimated that the system will generate 168kW of power. The District expects to save about \$20,000 in electric costs per year.*

Has your school has received any green school, environmental, healthy school, environmental education, or sustainability education awards? If yes, please describe them, and state the year in which they were received:

In 2010, the district received an Energy Star® Leader award for 10% reduction in energy consumption for an entire portfolio of buildings. Although this award was for the entire district, the High School contributed greatly to the award with a total of 11% reduction in consumption.

Has your School Board adopted a Green Strategic Plan? Yes No

In 2009, the district as a whole implemented a “District Strategic Plan”. Article VI, Action Plan #6, of the plan designates the implementation of “ A comprehensive Green Initiative promoting high performance, green, sustainable facilities.” Implementation of this Green Initiative have included:

- 1. District-wide energy audits. These were conducted under the NJ BPU Local Government Energy Audit Program (LGEAP), and as part of the Ameresco provided Energy Savings Improvement program; an Investment Grade Energy Audit.*
- 2. A District-wide, NJ legislated, Energy Savings Improvement Program (ESIP).*
- 3. The District is a participant in the NJ Board of Public utilities “Pay-for-Performance” program (P4P). Under the P4P program, the District has two completed and BPU approved Energy Reduction Plans; one for Bernards High School, and one for Bernardsville Middle School.*
- 4. Participation in the Schools for Energy Efficiency Program (SEE). SEE is a comprehensive program for K-12 schools to save energy and money by changing behavior throughout the district. To date, the district has achieved a reduction of 11% in energy consumption, avoided utility costs of \$203,510.00 and earned two prestigious Energy Star Awards. These achievements were attained through engaging students, teachers and administrators together, in low and no cost strategies, to decrease energy consumption, reduce carbon footprint and increase literacy and awareness of energy and environmental concerns.*
- 5. An official, school board-approved energy policy, designed to reduce carbon footprint and energy consumption.*
- 6. Participation by the high school in North America Power Partners’ (NAPP) Demand Response program by allowing NAPP to use the District’s electrical capacity to meet the capacity needs of the energy market. Demand response allows the District to manage electrical usage and plan for Demand Response events and tests called for by the Regional Transmission Organization, PJM through North America Power Partners, LLC. With Demand response in place, the District is taking steps to reduce the possible likelihood of brownouts /blackouts in the community. From an Environmental standpoint, the District is reducing its Carbon Emissions Footprint as they reduce electric usage. Electricity reduction would reduce the GHG emissions as well as the need to rely on generation plants or place additional stress on the electrical grid at times of High or Peak Demand.*

In addition to Action Plan #6, “The District Strategic Plan” also calls for:

- 1. An integrated K-12 environmental educational curriculum. The environmental curriculum is supplemented by environmental activities and clubs – in particular, at the high school level – “to enrich and extend environmental concepts within the established curriculum”. Details of these activities and clubs can be found throughout this application.*
- 2. Institution of a coordinated environmental awareness/recycling program throughout the district. Specifically, at the high school, recycling practices include a recycling contest, battery and ink cartridge recycling, electronic and computer recycling in conjunction with Borough and Green Team activities to promote and increase recycling practices.*
- 3. Establishment of a district-wide Earth Day. Although the strategic plan calls for establishment of Earth Day, all schools now celebrate Earth Week. At the high school, Earth Week Is celebrated by raising awareness of environmental concerns as well as activities to reduce our carbon footprint, including a recycling contest, turn out the lights day, toner cartridge collection, battery recycling program, energy awareness activities, and don’t drive to school week. Details of these activities are addressed in other areas of this application.*
- 4. Maximization of both indoor and outdoor athletic facilities*

Has your school created a Green Team? Yes No If yes, describe its composition.

The Bernards High School Green Team consists of students who are concerned about the impact humans are having on the environment at BHS, in the Bernards community, and throughout the world. Students meet every other week to discuss the progress of ongoing projects and to communicate new ideas to each other. Green Team students have been/are involved in the following: community/ school cleanups (picking up litter); major overhaul and up keep in the schools courtyard; purchasing and distributing recycling bins throughout the high school; beginning and running a composting program during the school lunches; earth week activities (including a recycling contest, don’t drive to school contest, and lights out day); recycling items that cannot be regularly recycled such as batteries; donating \$1,000 to Japan last year after the Tsunami, donating Battle of the Band T-shirts to the organization, “More Than Me” (T-shirts will be given to a community in Liberia), assistance with the town’s community garden; SEE Squad (detailed on p.7) and a building-wide vampire (phantom) load survey.

Additionally, The Green Team organizes an annual “Battle of the Bands”. This year will be the 5th annual “In Tune With the Earth: Battle of the Bands” fundraiser. Local bands audition for and compete in a concert-style performance at the Bernards High Arts Center. The purpose of the competition is to raise money and to promote environmental awareness. Money raised is

used to create a more “earth-friendly” school and community atmosphere. For example in years past the following has been done with the money, \$1,000 was donated to Japan after the Tsunami, purchase the recycling bins to distribute throughout the high school, purchase mulch and plants for the courtyard, begin a composting program, and this year the Green Team will use the money to purchase a Brita Hydration Station for the school to promote the use of reusable drinking containers instead of bottled water.

The Battle of the Bands, being open to the public and very well attended, serves to promote awareness of environmental concerns on a public, as well as school-wide basis.

Has your school seen a cost savings from green initiatives? Yes: No If yes, describe the savings.

Energy and cost savings have been achieved for the Bernards High School from a number of green initiatives implemented in the past year. 10 green initiatives have been implemented at this school, which generate significant energy, water, greenhouse gas and cost savings for Somerset Hills School District. The current savings associated with these initiatives is in excess of \$163,780/year. The following is a brief description of the cost saving measures implemented at Bernards High School.

1. *Lighting System Upgrades - All existing recessed linear fluorescent fixtures have been upgraded with high efficiency low mercury T8 florescent lamps, electronic ballasts, and reflectors to provide the most cost effective and energy efficient lighting system. All recessed can fixtures have been converted to compact florescent screw in bulbs. T5 linear fluorescent high-bays fixtures were installed in the gymnasium. Highly efficient LED lamps have been installed in all recessed cans fixtures in the hallways and aisle lights in the auditorium.*
2. *Lighting Controls - Throughout the High School 124 local lighting controls employing a variety of control strategies were installed, each of which was customized to the unique space. Areas where new occupancy based lighting controls were installed include classrooms, offices, baths, the cafeteria, and the gym. Bathrooms or other areas without direct line-of-sight to the sensor, received dual-technology sensors that “listen” for activity in addition to “looking” for motion. The fluorescent high-bays in gyms have motion sensors installed on each fixture, allowing each fixture to operate independently for maximum savings and flexibility.*
3. *Building Energy Management System upgrade – The existing direct digital control system at Bernards High Schools has been fully re-commissioned and expanded to implement several energy and cost saving strategies within the building. The expanded energy management system now implements the following energy savings strategies: improved occupied and unoccupied schedules, fully night setback un occupied temperature at 55 degrees, optimum start stop of all major HVAC equipment and demand controlled ventilation. CO₂ sensors were install to control the ventilation rates of 30 packaged roof top air handlers, 41 classroom unit ventilators, 8 heating and ventilation units and 5 Air handling units.*
4. *Vending Machine Controls –Occupancy sensing, plug load controllers have been installed on 3 refrigerated vending machines and one non refrigerated vending machine to reduce the unnecessary operation of vending machines during unoccupied periods. The vending machine controllers will save energy used by vending machines during unoccupied hours. The controllers will use occupancy based sensors to detect when the space is unoccupied and turn off the vending machines.*
5. *Computer load Management Software –A software tool that will allow measurement, management, and reduction of energy consumption of building computers and monitors has been installed. This software will save energy consumed by computers during both occupied and unoccupied periods. The software detects user presence by tracking inputs such as mouse movement or use of the keyboard. When no inputs are detected for a period of time the software will place the controlled computer into a reduced energy consumption state.*
6. *Kitchen Range Hood Fan Controls – The existing kitchen range hood system has been upgrade with variable flow controls at the Bernards high School. The new control system monitors all hood temperatures and senses for smoke, increasing or slowing both the kitchen exhaust and associated RTU supply fan speed simultaneously in response to kitchen activities. When full airflow is not required, the amount of air being vented is reduced, thereby saving heating energy required to treat the make-up air. Electrical savings are also attained by means of slowing the speed of the fan motors during operation.*
7. *Water Conservation Improvements – All existing water closet fixtures, urinals and faucets have been upgraded to the most current low flow products available at the time of installation. The water closets have been upgraded to 1.28 gpf units. All existing urinals have been upgraded to 1.0 gpf valves. Existing restroom sink faucets have been installed to operate at 1.0 gpm.*
8. *Energy Procurement – Somerset Hills School District has competitively procured an energy supply contract to procure all energy commodities from a third party vendor for both electricity and natural gas. This process does not save energy but it ensures that the District is receiving its energy commodity at the best price possible and results in significant energy cost savings over the standard rates of the utility.*

9. *Building Envelope Improvements/Infiltration – Somerset Hills School District has installed weather-stripping /caulking around doors, windows, wall/roof junctures and roof penetrations at Bernards High School. The school has undergone a complete building envelope air sealing project to minimize unwanted unconditioned air from infiltrating the building envelope. The new envelope improvement measure will help create a better seal to limit infiltration, effectively reducing heat loss from the interior to the outside. Building occupants will experience greater comfort near windows and doors.*
10. *Ice Storage System Schedule Modification – The thermal energy storage system (ice storage) at Bernards High School has been rescheduled so that the current sequences of operation for the chilled water plant only operate during off-peak hrs, as defined by JCP&L, from 8 PM to 8 AM. This improvement results in significant energy cost savings as it ensures the lowest cost energy is utilized to perform the necessary cooling of the school. The thermal storage system shifts energy use from the peak demand period to the more cost effective off peak period. In addition to cost savings this process also improved the reliability and operation of the utility grid by shifting load from the stressed utility grid during high demand periods to the off peak periods when the utility grid system is not as stressed.*

In addition to those measure mentioned above, to date, after two years of undertaking low and no cost behavioral strategies through the SEE program, the district has achieved a reduction of 11% in energy consumption, avoided utility costs of \$203,510.00. Specifically, the High School contributed greatly to this award, with avoided costs of \$128,601.00 and a reduction in energy consumption of 11%.

PILLAR 1: ENVIRONMENT IMPACT AND ENERGY EFFICIENCY Buildings, ground and operations: The school has made significant progress toward net zero environmental impact (zero carbon, solid waste, and hazardous waste footprints.)

Element 1A: Zero greenhouse gas (GHG) emissions

ENERGY

1A1. Using the inventory module from Clean Air Cool Planet's Campus Carbon Calculator or similar green-house gas calculator, what is your school's GHG emissions per person?

The High School's GHG is 1533 MT (metric tons). 1533 MT/ 884students and staff = 1.734 MT eCO2/person

1A2. Has your school received EPA ENERGY STAR certification? Yes * No

** Award was for entire school district, but Bernards High School contributed greatly to the energy savings results and ward would not have been achieved without energy savings results from high school.*

Was the certification earned? *Energy Star Leader Award (10% reduction in energy consumption) for School District.* If yes, in what year? *2010*

Has your school reduced it total non-transportation energy use from an initial baseline? Yes: No

1A3. Has your school conducted an energy audit of its facilities? Yes: No (Note: District-wide energy audits were conducted under the NJ BPU Local Government Energy Audit Program (LGEAP), and as part of the Ameresco provided Energy Savings Improvement program; an Investment Grade Energy Audit.)

Percentage reduction: *16.4 % (Ameresco)*

Measurement unit used (kBtu/Square foot or kBtu/student): *kBTU/square foot*

Time period measured: *from July 2008 to June 2011*

*11% *reduction in energy consumption from baseline established in SEE program - MMBTU/building as measured by the SEE program* Time period measured: *12/1/09-11/30/11*

*Energy Star Portfolio Manager indicates reduction of 19.6% *- same time period as SEE program*

Ameresco data is third party verified energy savings for ESIP; SEE program is estimated cost avoidance based on weather conditions; Energy Star savings measured by portfolio manager

1A4. What percentage of your energy consumption is derived from the following: (this includes BTU's/energy from Geothermal and bio--fuels or electricity from solar, wind and fuel cells).

On--site renewable energy generation * *0% currently, but but Solar to be implemented in the Spring/Summer of 2012 – see bullet #3 below.*

Purchased renewable energy: *0%*

Natural Gas: *100%*

Please indicate which energy saving practices have been implemented at your school

[X] School has automatic light sensors in all regularly occupied rooms or has a policy to turn off lights in all unoccupied rooms and use daylight when possible. *In addition to automatic light sensors in all regularly occupied rooms, SHSD – energy policy requires that lights are to be turned off in all unoccupied rooms. Building has computer controlled lighting system that is programmed in accordance to after school and weekend activity at the building. In addition, School has had building-wide “lights out” days to celebrate Earth Week. Energy Savings were measured and distributed via a newsletter as a reminder to turn off lights when not in use.*

[X] School policy requires all computers and other electronic equipment to be turned off at the end of the day. *SHSD energy policy requires electronics and computer monitors are to be turned off when not in use and at the end of the day. Computers are not shut off due to automatic updates and virus scan software. Computers have been uploaded with “PC load management” software, in which computers are put into sleep (low energy state) mode if keyboard is not being used for specified amount of time.*

[X] School is inspected for potential energy waste on a regular basis (at least annually) and issues are addressed promptly by maintenance staff.

Additionally, boilers are checked daily and issues that may affect energy waste are addressed promptly. Windows are checked regularly throughout the year for cracks, leaks, etc. that may affect heating and cooling waste and issues are addressed promptly.

[X] School sets standard heating and cooling points of 68 -- 70 degrees during the heating season and no higher than 75 degrees for air conditioning.

[X] School has a programmable system or weekend and vacation shutdown procedures for its HVAC system.

[X] Window blinds or curtains are shut at the end of the day to retain heat and opened in the morning to let in daylight. *Windows are energy efficient so curtains and blinds are not closed at end of day - by policy - although some personnel do this. Energy Policy encourages teachers to use natural light in place of artificial lights whenever possible, so window blinds are curtains are opened during the school day to make best use of natural light.*

[X] Windows and doors are closed when heating/cooling systems are on.

[X] School has developed and implemented a communication plan that includes print and electronic media for students, staff and parents regarding above practices.

Identify all additional energy efficiencies that are possible using potential energy reductions.

1. *Gym De-stratification Fans – The installation of thermal equalizing fans to the gymnasium is an additional improvement that could be implemented. Thermal equalizing fans can provide significant improvement in high ceiling environments of both energy reductions and occupant comfort by improved mixing of the air.*
2. *Maximicer Ice Machine Retrofit – The installation of two heat recovery devices on each of the ice machines at the High School is an additional improvement that could be made at the High School. The Maximicer heat recovery devices would be fitted to the existing ice machines. The device would have recovered energy from the purged ice water and utilize it to increase the efficiency of the machine.*
3. *The School District entered into a shared initiative with the Somerset County Improvement Authority (SCIA) to install solar panels on the roof of the High School and the elementary school. Approximately 80% of the High School roof will be covered. It is estimated that the system will generate 168kW of power. The District expects to save about \$20,000 in electric costs per year.*
4. *Low and no cost behavioral strategies associated with the SEE program include*
 - *Lights are to be turned off when room is unoccupied*
 - *Lights, such as task lighting in nurses’ offices and laboratories are to be turned off when tasks are not being performed*
 - *Lights are on programmable timers, with programming software modified to coincide with after school, evening or weekend activities*
 - *Rooms are equipped with automatic light sensors – sensors additionally adjust foot candle levels to state requirements based on outside natural light conditions.*
 - *Computer monitors are to be turned off when not in use*
 - *Smart boards and other electronics are to be operated in “power save” mode*
 - *Equipment is to be unplugged at the end of the day and when not in use, if feasible, to reduce vampire load*
 - *Personal appliances are not permitted (with exceptions)*
 - *Cell phone charging is discouraged*
 - *Kitchen and cafeteria energy savings polices in place during regular school days and weekend and vacation shut downs*

- *Weekend and vacation shutdown procedures in place with maintenance staff*
- *Custodians turn lights on only in areas that are being cleaned on evenings and weekends. All other lights are to be turned off during cleaning times.*
- *Earth Week activities, including lights out day, energy awareness activities, etc. are undertaken to increase awareness and effectiveness of energy efficiency strategies*
- *School Green Team partners with SEE program to enact energy efficiency strategies. These include student led “SEE squads”, (which leave stickers reminding staff to turn out lights - “WOW” for lights out and “OOPS” for lights left on), vampire load surveys of entire building, energy poster contest, “green teacher of the year” award, and earth week activities.*

Of the efficiencies identified above, match those with any possible state and federal incentives to help defray the cost. *Guaranteed energy savings generated via the District’s ESIP combined with energy rebate funds from the BPU “Pay-for-Performance” program were used to make all energy efficiency improvements fully self-funding, requiring zero capital dollar contribution from the District.*

With each site being considered, identify possible renewable energy options and provide the potential reduction in energy usage.

The School district entered into a shared initiative with the Somerset County Improvement Authority (SCIA) to install solar panels on the roof of the High School and the elementary school. Approximately 80% of the High School roof will be covered. It is estimated that the system will generate 168kW of power. The district expects to save about \$20,000 in electric costs per year.

Identify state and federal incentive programs available, and provide a cost payback analysis for each renewable being considered

The School district entered into the shared solar initiative with the Somerset County Improvement Authority (SCIA) . . . It is estimated that the system will generate 168kW of power. The district expects to save about \$20,000 in electric costs per year.

BUILDINGS

1A5. Has your school constructed and/or renovated buildings in the past 10 years? Yes: No

What percentage of the building area meets Leadership in Energy and Environmental Design (LEED), Collaborative for High Performance Schools (CHPS), Green Globes or other standards? *

** The most recent High School building renovation, completed in 2010, as well as the infrastructure upgrades completed under the ESIP, were designed and constructed to include many environmental and energy savings features. These include low NoX boilers, energy efficient lighting and computer-controlled scheduling, water conservation measures, upgraded energy efficient kitchen appliances, software upgrades to reduce energy use for computers, and air quality monitoring. Although the building has not received an official label for environmental design, the District architect is currently working on the application for a Green Globes standard. As of the deadline date of this application, the Green Globes application has not been finalized. Note that the district did receive an Energy Star Leader award, with the high school contributing greatly to this achievement.*

Details of the environmental and energy savings features of the high school building can be found throughout more specific questions in this application.

In what year was your school constructed and/or renovated? Constructed in 1928, Renovated in 1954,1966,1976, 1990, 2010

What is the total constructed area? 252,715 (SQ.FT.)

What is the total renovated area? 79,100 (SQ.FT.)*

** represents area of most recent (2010) renovation*

Which certification (if any) did you receive and at what level (e.g. Silver, Gold, Platinum) and in what year? *N/A*

1A6. Have the project plans been viewed from an Integrated Pest Management (IPM) point of view?

Yes No

Has IPM been considered before any new building project or renovation project (either buildings or grounds)? Yes No

1A7. What percentage of your school's total existing building area has achieved LEED Existing Buildings: Operation & Maintenance, CHPS Operations Report Card, Green Globes or other standards? * (see note under 1A5, above) - existing building was also retrofitted with environmental and energy-savings features included in * above.

What is the total building area? 252,715 (SQ.FT.)

Which certification (if any) did you receive and at what level (e.g. Silver, Gold, Platinum)? N/A

1A8. Does your school reduce or offsets the GHG emissions from building energy use? Yes X No ___

If yes, please provide:

Current Total GHG Emissions (MtCO₂e) 1533

Baseline Total GHG Emissions (MtCO₂e) 1748

Change from Baseline: GHG Emissions (MtCO₂e) 215 or 12.3 %

Time period: from July 2008 to June 2011

Explain any offsets used: No offsets used

Please indicate which green building practices your school is using to ensure your building is energy efficient.

[X] School has fully* implemented the Facility Energy Assessment Matrix within EPA's Guidelines for Energy Management.

**The Energy Star @Facility Energy Assessment Matrix can not be fully implemented for each action plan in public school districts due to constraints of public policies, but the overwhelming majority of the action plans have been fully implemented. Below is a list of action plans listed in the The Energy Star® Facility Energy Assessment Matrix and the status of each with notes:*

Site Energy Leader: Fully Implemented; Site Energy Champion: Fully Implemented ;

Site Energy Team: Some Elements; Energy Policy: Fully Implemented ;

Site Energy Plan: Fully Implemented ; Accountability: Fully Implemented;

Participation Levels: Fully Implemented; Track & Analyze Data: Fully Implemented

Documentation: Fully Implemented; Benchmarking: Fully Implemented;

Technical Assessments: Fully Implemented (plan not in place for five years, but assessments are regular)

Best Practices: Fully Implemented; Goals/Potential: Fully Implemented;

Career Development: Fully Implemented (applies to one district employee only);

Energy Team Incentives: Some Elements (applies to students and staff – incentives are awards);

Improvement Planning: Fully Implemented; Roles and Resources: Fully Implemented

Site Planning Integration: Fully Implemented; Communication Plan: Fully Implemented

Energy Awareness: Fully Implemented;

Building Staff Capacity: Some Elements (not applicable for school district to provide training for all staff)

Contract Management: Fully Implemented; Incentives and Rebates: Fully Implemented

Measuring Results: Fully Implemented; Reviewing Action Plan: Fully Implemented

Site Recognition: Fully Implemented (Awards are non-monetary);

Organizational Recognition: Fully Implemented;

External Recognition: Fully Implemented (Energy Star® Leader award for entire district)

[N/A*] School Building has been assessed using the Federal Guiding Principles Checklist in Portfolio Manager. *This question is not applicable for schools. The "Federal Guiding Principles Checklist" in Portfolio Manager applies to Federal building only.

According to the Energy Star website, "The purpose of the Federal Guiding Principles Checklist within EPA's ENERGY STAR® Portfolio Manager, is to assist FEDERAL agencies with assessing their existing building stock against the Guiding Principles for Sustainable Existing Buildings. The Guiding Principles Checklist IS ONLY AVAILABLE FOR BUILDINGS DESIGNATED AS FEDERAL WITHIN PORTFOLIO MANAGER." (and they have to already exist in the Federal Real Property database into Portfolio Manager).

[X] School has an energy and water efficient product purchasing and procurement policy in place.

[X] Other : *The SHSD has implemented a District-wide, fully self-funded, guaranteed Energy Savings Improvement Program (ESIP) that incorporates all available energy rebates/incentives from the NJ BPU Office of Clean Energy "Pay-for-Performance" Program.*

1A9. What percentage (by cost) of all your school's furniture purchases are certified under the Business and Institutional Furniture Manufacturers Association's "level" ecolabel? *Not known*

1A10. Does your school have an energy and water efficient product purchasing and procurement policy in place? Yes X No ___

If yes, describe the policy that is in place *SHSD Energy Policy (school-Board approved district Energy Policy) states that "ENERGY STAR @products will be considered when purchasing any new equipment or appliances"*

1A11.1 Does your school purchase energy through ACES? (Alliance for Competitive Energy Services)

Yes___ No: X (Note: *As part of the District's ESIP, new electrical supply contracts were secured through an open bid, competitive process. This procurement for electrical supply proved more economical for the District when compared to the ACES offering*)

1A11.2 Describe other indicators of your progress towards elimination of GHG emissions in detail and include metrics if available):

Reduction in Energy Usage is greatest measurement of progress towards elimination of GHG,(90% of GHG emissions caused by production and distribution of energy) Indicators of our progress include:

1. AMARESCO energy reduction measurements
2. SEE program "portfolio manager software"
3. Energy Star®Ratings and Portfolio Manager Software for High school and School District as a whole.
Ameresco Percentage reduction: 16.4 % kBTU/square foot
SEE program: 11% reduction MMBTu/building
Energy Star Portfolio Manager indicates reduction of 19.6%
Ameresco data is third party verified energy savings for ESIP; SEE program is estimated cost avoidance adjusted for weather conditions; Energy Star® savings measured by portfolio manager
Ref. question # 1A3 for details

Element 1B: Improved water quality, efficiency, and conservation

1B1. Can you demonstrate a reduction in your school's total water consumption (measured in gal/square foot) from an initial baseline? Yes No

Percentage reduction in domestic use: 11.6%

Percentage reduction in irrigation: 0%

Percentage reduction: 11.6%

Time period: from July 2008 to June 2011

Which of the following practices does your school employ to increase water efficiency and ensure quality? (Please check all that apply)

Our school conducts annual audits of the facility and irrigation systems to ensure they are free of significant water leaks and to identify opportunities for savings

[N/A*]Our school has a smart irrigation system that adjusts watering time based on weather conditions.

* *Smart irrigation system not needed. Only one field is irrigated and only in 2 months in summer if dry*

Our school's landscaping is water-efficient and/or regionally appropriate.

Our school uses alternative water sources (i.e. grey water) for irrigation before potable water.

Our school has not been sited within the past three years for failure to meet federal, state or local potable water quality standards.

[*] Taps, faucets, and fountains at our school are cleaned at least twice annually to reduce contamination and screens and aerators are cleaned at least annually to remove particulate lead deposits.

* *Aerators very recently replaced. Taps and faucets are routinely inspected and issues are addressed as needed*

[*] Our school has a program to control lead in drinking water (including voluntary testing and implementation of measures to reduce lead exposure)

* *NJ American Water Company performs this function for the school*

1B2. How often does your school conduct audits of facilities and irrigation systems to ensure they are free of significant water leaks and to identify opportunities for savings? *The school uses only one irrigation system, an above ground system for one field that includes a baseball diamond. Field is only irrigated in July and August, if needed. Irrigation system is inspected when used. Facility leaks are addressed as soon as reported.*

1B3. Describe how your school's site grading and irrigation system and schedule is appropriate for your climate, soil conditions, plant materials, and climate, with an emphasis on water conservation:

Irrigation system is only used if there are dry conditions in July and August and serves only one field – the baseball field on the lower field. Landscaping features were chosen to be hardy in accordance with drought conditions expected in area. Other than initial waterings to ensure establishment, plantings were chosen to thrive in local weather conditions (rain, dry, climate zone, etc.) without regular irrigation.

1B3.1 Has your school sought advice from Cooperative Extension for irrigation efforts. * Yes No N/A

**Not applicable – irrigation used on only one field and only if there are dry conditions in July and August*

**Appropriate plantings can change from county to county within a given State and schools taking advantage*

Cooperative Extension should be credited for asking for and following proper advice.

1B4. Do all your outdoor landscapes consist of water-~~efficient~~ or regionally-~~appropriate~~

(native species and /or adapted species) plant choices? Yes X * No ___ If no, what percentage of the total consists of this type of plantings? * *landscaping features are either native or chosen because of drought resistance(water efficient), or regional appropriateness (climate zone, hardiness, soil conditions, deer resistant, etc.)*

Describe the type and location of plantings:

<i>Acer saccharum</i>	Native
<i>Ulmus libertensius</i>	Native
<i>Juniperus virginiana</i>	Native
<i>Quercus coccinea</i>	Native

Prunus x yedoensis yoshino

Picea abies

Picea pungens glauca

Thuja plicata 'Green Giant'

Berberis triacanthophora

Buxus microphylla 'Northern Emerald'

Lagerstroemia 'GAMAD'

Liriope muscari 'Varigata'

Prunus laurocerasus 'Schipkanensis'

Rosa MEIpicdevoj'

Sedum x 'Vera Jameson'

Locations are in front of Administration Building, High School Building and side driveway

Due to age of high school, majority of trees are existing, mature trees, primarily evergreens and deciduous maples.

In addition, the courtyard garden consists entirely of native shrubs and perennials, and was constructed specifically to showcase native plants. Courtyard garden occupies internal open space within building footprint, outside of the interior "glass hallway"

1B5. Are alternative water sources (e.g., grey water) used before potable water for irrigation?

Yes ___ No X If yes, describe these alternative water sources:

1B6. If drinking water is acquired from the school's own well, are your drinking water sources protected from potential contaminants? Yes ___ No ___ N/A school does not acquire drinking water from a well

If yes, describe how they are protected:

1B7. Does your school have a program to control lead in drinking water (including voluntary testing and implementation of measures to reduce lead exposure in drinking water) in place?

Yes X No ___ If yes, describe this program:

NJ American Water Company performs this function for the school

1B8. Has your school been cited within the past three years for failure to meet federal, state or local potable water quality standards? Yes ___ No X

1B9. Are all taps, faucets and fountains used for drinking and cooking cleaned on a regular basis to reduce possible bacterial and other contamination; and are faucet screens and aerators regularly cleaned to remove particulate lead deposits? Yes ___ No X *

* *All aerators recently replaced – aerators replaced as needed*

1B10: Describe any other ways, not addressed above, that the school is improving water quality, efficiency, and conservation:

1. *New Jersey American Water Company performs water quality testing for school*
2. *Through the District's Energy Savings Improvement Program, all water closets, faucets, and urinals were recently retrofitted (2011) with new modern, energy efficient models.*
3. *SEE program emphasizes water conservation behavior, for example, instructing students not to let the water run when washing hands (turnoff water while soaping, ex.), instructing students and staff to report water leaks promptly, etc.*
4. *Lower Field is watered only when dry conditions exist during the months of July and August. Savings realized from unnecessary watering.*
5. *Landscaping features chosen to be hardy to local weather conditions, including drought.*

Describe any financial savings from water conservation methods or technologies that your school has installed:

Annual savings from the improvements to existing water closets, faucets, and urinals is in excess of 323,000 gallons of water each year at a cost savings of \$28,150 in both water and sewer utility at Bernards High School

Describe any local resources or experts that you consulted that helped improve the overall water efficiency and quality of the water in your school.

Ameresco, Inc., Water Management, Inc., New Jersey American Water Company

GROUNDS

1B11. What percentage of your school grounds (e.g., playgrounds, rain gardens, outdoor spaces designed and used regularly for social interaction, athletic or recreational areas, etc.) are devoted to ecologically or socially beneficial uses, including those that give consideration to native wildlife?

- 1. 65% of the school grounds consist of permeable soil. The only large open field is the "lower field" which includes a baseball diamond and open field. Field measures 180×10^3 sq.ft. . Area behind lower field consists of undisturbed wooded area, stream and Primrose Creek.*
- 2. Courtyard Garden enclosed within grounds of high school building was constructed in Spring, 2011. High School Green Team undertook garden design and native plantings. Green Team currently weeds and mulches garden on a regular schedule. Area was previously unused dirt patch left over after building addition completed, and was found to be home to small mallard duck population. Garden was designed to beautify area, showcase native plants and improve habitat for duck population. Garden includes benches for eating, reading, etc.*
- 3. School grounds that are devoted to socially beneficially use include:*
 - Courtyard Garden*
 - Track and enclosed field within track – open to residents for recreational use*
 - Lower field and hill – open to residents for recreational use*
 - Small grassy area behind cafeteria – equipped with picnic tables – used extensively by students and staff to eat outside weather permitting*
 - Football field and track area used for school events and games – open to public*

1B12. Have you diverted rainwater that falls on impervious surfaces (roof, parking lot) from the city storm sewers to on-site management areas such as rain gardens, swales, or ponds? Yes No

A retention basin under the building grounds collects and eases rainwater out slowly to reduce potential for flooding in nearby stream and Primrose Creek

Element 1C: Reduced waste production

WASTE

1C1. What percentage of waste is diverted from the landfill or incinerator by reuse, composting, and/or recycling:

16 cu. yards of cardboard and paper recycling and 8 cu. yards of plastic and glass bottle recycling is collected weekly. Total monthly recycling is 96 cubic yards, so recycling represents approx. 32.43% of total

The High School Green Team has just begun a composting program in the cafeteria. Every Wednesday is "composting Wednesday" where composting buckets are put out in the cafeteria during the student lunches. Students are encouraged to put their compostable waste into the buckets. At the end of the day, a Green Team member takes the compost buckets up to the courtyard where there are two large compost bins. Scraps are also collected from the kitchen and saw dust is collected from the wood shop class. Eventually the composted material will be used in the school courtyard garden and in other areas around the school grounds. As the program grows, we hope to offer the composted soil to the teachers at the school and possibly to the parents of Green Team members for use in their garden at home. The Green Team is hoping to expand the program to other days if things go well this year. It is too early to quantify how much compost will be collected, but the composting bins are currently half full.

Monthly garbage volume (garbage dumpster size(s) X frequency of collection):

10 cu. yards x 5 collections per week = 50 cu. yards per week

50 cubic yards collected per week x 4 weeks = 200 cu. Yards/month

Monthly recycling volume(s) (recycling dumpster sizes(s) X frequency of collection):

16 cu. yards of cardboard and paper recycling and 8 cu. yards of plastic and glass bottle recycling is collected weekly. 24 cu. yds. weekly x 4 weeks = 96 cu. yards per month.

Monthly compostable materials volume(s) (food scrap/food soiled paper dumpster size(s) X frequency of collection: Not yet known cubic yards. (The Green Team is hoping to expand the composting program next year. It is too early to quantify how much compost will be collected, but the composting bins are currently half full.)

Recycling rate calculation: Total monthly recycling quantity, plus total monthly compostable material quantity divided by total monthly recycling, composting, and garbage quantity x 100 = 32.43%

or Recycling Rate = $((B + C) \div (A + B + C) \times 100)$

$(96 \div (200+96) \times 100) = 32.43$

1C2. What percentage of total office/classroom paper content by cost is post-consumer material or fiber from forests certified as responsibly managed by the Forest Stewardship Council, Sustainable Forestry Initiative, American Tree Farm System or other certification standard: * % (If a paper is only 30% recycled, only 30% of the cost of that paper should be counted towards the recycled portion.) Which standard did you use?* N/A

** Office paper is purchased under the Somerset County Cooperative purchasing agreement. Contracts run 6 or 12 months. School does not have choice in purchasing of recycled vs. non-recycled office paper. School does have a choice in purchasing of paper for restroom facilities. Toilet paper and paper towels are all 100% recycled paper. Classroom paper amount has been greatly reduced – see Question #1C4*

1C3. What percentage of total office/classroom paper content by cost is "totally chlorine-free" (TCF) or "processed chlorine-free" (PCF)? 100%

1C4. Describe the steps taken to replace paper instruction with paperless, (working and reviewing online, white boards, flash cards, etc). Smart Board are in every classroom – greatly reduces need for paper handouts by teachers

1. Homework, homework help, test preparation, syllabi, etc. are posted on school website, eliminating paper handouts to students
2. Communications between school and parents/students is all generated online. In addition, a weekly Friday Folder is generated and available online and is also e-mailed to all student households. The Friday Folder contains announcements, upcoming activities, and other information that is needed by students and parents.
3. A Community Friday Folder is also distributed online from the high school reducing greatly the need for the Borough of Bernardsville, local community organizations, religious organizations, etc. to distribute paper mailings, flyers, advertisements, etc.
4. A school-wide wireless network is available and students are permitted to bring laptops to the classrooms, greatly reducing the need for paper note-taking.
5. Students are encouraged to submit research papers in online through "turn it in.com", reducing paper and ink usage in printing
6. Describe the amount of paper per student saved. Difficult to quantify as these steps vary by student, class, and subject within class.

1C5. Does your school refill or recycle printer cartridges? Yes X No

1C6. Does your school use durable plates, trays, and tableware? Yes X * NO *Trays

If your school composts on site, do you use compostable tableware instead of plastic?

Yes NO X

Which of the following practices does your school employ to reduce waste?

[X] Our school has a program in place to promote waste reduction practices (for example, reduced paper use, use of durable products).

[X] Our school has implemented policies to reduce the amount of ink used in printing (for example, toner saver features, preferred font selections)

[] Our school does not sell bottled water.*

** Although the school does sell bottled water, recycling cans are numerous and placed in areas where bottled water is consumed. Various programs to reduce bottled water use are in place, including distribution of reusable water bottles as prize for recycling contest, and Green Team- themed reusable water bottles for sale.*

[X] Our school has installed a hydration station and/or conducted a campaign to promote use of reusable water bottles.

The Green Team holds an annual recycling contest as part of Earth Week Celebrations. Recycling areas are designated for each grade and the volume is measured at the end of the week. The winning grade receives a reusable water bottle for each student. The Green Team also sells reusable water bottles. This year the Green Team will use the money raised during the

annual "Battle of the Bands" fundraiser to purchase a Brita Hydration Station for the school to promote the use of reusable drinking containers instead of bottled water.

[X*] Our school has reduced or eliminated Styrofoam and other disposable trays and utensils in our lunch room. * trays

[X] Our school actively involves students and staff in our waste reduction and recycling practices.

1C7. How much hazardous waste does your school generate? (lbs/student/year)

Medical Waste = 2 pounds total/year - 780 total students at Bernards High = .0025 lbs/student of medical waste

How was this calculated? Medical Waste = 2 pounds total/year , 780 total students at Bernards High = .0025 lbs/student of medical waste

Waste from science labs - unable to calculate exact amount- see next question

Paint - Varies per year depending on usage - NONE generated in 2010-2011 school year

List each type of hazardous waste generated, and the amount of each present at the end of the year:

1. *Medical Waste from Nurse's office:*

Medical waste consists of lancets that the diabetic student will test blood sugar three times daily and syringes that were used to administer mantoux test. 2 lbs total generated per year - no waste present at end of school year

2. *Paint - Varies per year depending on usage - NONE generated in 2010-2011 school year*

3. *Laboratory Waste:*

- Preserved specimens (frogs, cats, sheep parts, pigs) used for dissection in biology and anatomy labs. Specimens are double bagged and disposed of in trash as per recommendations from Carolina Biological Supply and in accordance with local codes. No waste present at end of school year*
- Chemicals - Most chemicals used in chemistry labs are not hazardous and are able to go down drain in accordance with local codes. Any chemicals that are not able to go down drain - due to environmental concerns or regulations - are disposed of by contacting vendor, who then picks up materials and disposes in accordance with regulations. The school has instituted a policy of ordering chemicals in smaller quantities to reduce the need to dispose of unused or outdated material. While purchasing chemical in smaller quantities is more expensive, it reduces the amount of waste generated. No chemical waste is present at end of school year.*

1C8. How does your school monitor hazardous waste?

Medical Waste - Orchard Hill is called yearly and appointment is made to come and pick up medical waste. Documentation is given to school nurse entitled "Special Waste Manifest", and it has generator ID number, account number and date. It also has a tracking form number that correlates with the State of New Jersey Department of Environmental Protection, Solid and Hazardous Waste Management Program shipping document. This multi-copy shipping document accompanies each shipment of RMW generated in NJ. School Nurse keeps this form on file in the High School Health Office.

Laboratory Waste is managed by Administration

Paint recycling is managed by Maintenance Department

1C9. Is a Hazardous Waste Policy for storage, management and disposal of chemicals in laboratories and other areas with hazardous waste in place and actively enforced? Yes X No

1C10. Has your school been cited within three years for improper management of hazardous waste according to Federal and State regulations? Yes No X Don't Know

1C11. What percentage of total computer purchases by cost are Electronic Product Environmental Assessment Tool (EPEAT) certified products:

Approximately 13% of desktops and 6.25% of laptops are EPEAT certified.

Below is a list of EPEAT certified computers

20 Lenovo ThinkCentre M71e 3134 - Core i3 2120 3.3 GHz Desktops, 14 Dell Optiplex 780 Desktops, 9 LG 2246T Monitors, 5 Dell Latitude E5400 Laptops

In addition approximately 70 computers are configured in an energy efficient "ncomputing" configuration, which allows multiple users to share one computer simultaneously, so that one ordinary desktop computer can cater multiple users at the same time.

How does your school dispose of unwanted computer and other electronic products?

Unwanted computer and other electronic products are recycled.

In April 2011, the Borough of Bernardsville Green Team partnered with Bernards High School Administration and Student Green Team to hold a borough-wide computer and electronics recycling day. Collection area was staged at High School parking lot. Computer and electronic recycling items included old television, monitors, printers, towers, and other CPU's. 51/2 box trucks total of waste were collected (15 ft. x 8ft. x 8ft.), of which 1 box truck was just waste from Bernards High School. Funding for the program came from the a Somerset County recycling grant. The electronic and computer recycling day was so successful that the borough and school are again holding a recycling day this year – scheduled for April 12, 2012.

1C11.1 Describe how your school manages spent fluorescent lamps (light bulbs).

All lamps containing mercury were and are processed as hazardous waste and disposed of using authorized hazardous material recycler.

1C12. Our custodial program has been certified by the ISSA Cleaning Industry Management Standard -- Green Building (or other equivalent standard). Yes No

1C13. What percentage by cost, of all cleaning products in use, are "third party certified" green cleaning products? 90 % of cleaning products are "Green Seal Certified"

Bernards High School obtains cleaning products and restroom toilet paper and paper towels from Hillyard. Hillyard is the nation's largest manufacturer and distributor of Green Seal Products. Paper towels are manufactured by BayWest Paper. The towels are 100% green seal certified, recycled and contain no bleach. BayWest paper is the only restroom paper that is meets green certification for manufacturers.

Which standard(s) are you using? *Green Seal Certification*

Element 1D: Use of alternative transportation to, during and from school

1D1. What percentage of students walk, bike, bus, or carpool (2+ students in the car) to/from school?

780 Students at High school

270 signed up for bussing = 34.6%; 116 parking spaces purchased (drivers) = 14.9%;

*123 train riders = 15.8%; 271 remaining -= 34.7%**

Remaining 271 students walk to school or are given ride by parent or another student. High school is situated in residential neighborhood with sidewalks and crossing guards are provided at all major intersections. Neighborhoods within 2 miles of school are densely populated with residences and have sidewalks. Therefore, majority of students who live within 2 mile radius are able to walk. Carpooling statistics are not available, but observation shows more than one person occupies majority of cars.

Describe how this information been collected and calculated: *Information obtained from Guidance Department – personnel in charge of bussing and purchasing of yearly parking space permits. Transportation Software "Bus Boss" utilized by school personnel*

1D2. Does your school have a no-idling policy on file and signs posted stating that all vehicles, including school buses and other vehicles dropping off and picking up students, are prohibited from idling on school premises? Yes No

Describe how you are complying with the NJ no idling law. *Buses parked 25 ft. from entrance and no idling policy in place while waiting for students to be dismissed from school. Car riders are dropped off in front of administration building – not in front of high school.*

1D3. Are all vehicles loading & unloading areas at least 25 feet away from all buildings air intakes(including doors and windows)? Yes No

1D4. Describe how your school transportation use is efficient and environmentally benign (e.g. the percentage of school-owned electric/hybrid/alternative fuel vehicles in your fleet, or other indicators of significant reductions in emissions):

All busses in the fleet were retrofitted 2 years ago with a closed crank case ventilation system. In the past, tubes were used to blow by and vent into the atmosphere. Emissions are now run into a filter unit to be reburned (reused) vs. being vented into atmosphere.

*NJ adopted the California Low Emission Vehicle (LEV) program effective model year 2009. This

impacts all light duty (under 8,501 lbs GVWR) gasoline vehicles. All cars and light trucks sold in

NJ are, by default, now LEV or 50-state certified. The regulations are at N.J.A.C. 7:27--29.

1D5. Have "Safe Pedestrian Routes" to school or "Safe Routes to School" been designated, distributed to parents and posted in the main office? Yes No

The Somerset Hills Schools district as a whole collaborates with the Borough of Bernardsville on the "Safe routes to School

Program.”. A long-running goal to build sidewalks that would link Bernards High School with the elementary and middle schools was boosted by the award of a \$300,000 state grant. Bernardsville's grant was part of the state Department of Transportation's (DOT) Safe Routes to School program. A new sidewalk was completed last Spring near the High School and three more sidewalk projects are in being planned. As part of the program, the Borough agrees to maintain, improve and shovel sidewalks on Borough property. A Borough ordinance requires homeowners to maintain and shovel sidewalks, so as to be safe for walking.

The district also organized the Ridewise and AAA National “Walk to School” Day

1E1. Describe any other accomplishments your school has made under Pillar 1 towards eliminating its negative environmental impact or improving your environmental footprint which you feel should be considered:

The Somerset Hills School District was one of the first NJ public school districts to develop and implement a guaranteed Energy Savings Improvement Program (ESIP) under the 2009 ESIP laws. The District-wide ESIP resulted in the SHSD realizing over 23% in savings off its current total annual operational spend, and significant green-house gas emission reductions.

The Somerset Hills School District was only the 2nd school district New Jersey to participate in the Schools for Energy Efficiency (SEE) program. SEE is a comprehensive program of low and no cost behavioral strategies designed to engage administrators, teachers, students and staff to reduce energy consumption, improve carbon footprint, and increase literacy and awareness of environmental concerns. Newsletters, quarterly savings reports, student activities, assemblies, and educational materials have all served to communicate and educate personnel on SEE strategies and environmental impacts of SEE results. The SEE program has partnered with the student Green Team on a number of activities, including environmental teacher of the year, judging of the elementary school energy poster contest, recycling program, turn off the lights days, and don't drive to school days. Most recently, SEE oversaw a Green Team project to complete a vampire load survey of the high school building. Students used watt meters to identify classroom with high vampire loads, and make recommendations on ways to reduce this phantom energy consumption. After 2 years in the SEE program, Bernards High School was able to reduce its energy consumption by 11% as compared to baseline, which translated to \$128,601.00 of avoided utility costs.

1E2. Describe what leadership decisions have been made and what partnerships have established related to Pillar 1:

As a result of the strategic planning process, the District embarked upon a number of environmental and energy savings initiatives. Partnerships were established with Ameresco, SEE, and NAPP for Demand Response to achieve these objectives. Decisions as to strategies and partnerships were undertaken by the School Board, Superintendent and Business Administrator.

PILLAR 2 : HEALTHY SCHOOL ENVIRONMENTS

Element 2A: An integrated school environmental health program based on an operations and facility-wide environmental management system that considers student and staff health and safety in all practices related to design, construction, renovation, operations, and maintenance of schools and grounds.

Integrated Pest Management

2A1. Does your school provide notification of your pest control policies, methods of application and requirements for posting and pre-notification to parents and school employees? Yes X No ___

2A2. Does your school maintain annual summaries of pesticide applications, copies of pesticide labels, copies of notices and MSDSs in an accessible location? Yes_ No_ N/A *

2A3. Does your school prohibit children from entering the pesticide area for at least 8 hours following the application or longer, if feasible, or if required by the pesticide label? Yes_ No_ N/A*

* School has Integrated Pest Management Plan (IPM) in effect. By IPM program, no chemicals are used in management of pests.

*New Jersey has a requirement for Integrated Pest Management (IPM) to be implemented in all schools below college grade, N.J.A.C. 7:30-13.

Ventilation

2A4. Does your school meet the stricter standard of: ASHRAE Standard 62.1-2010 (Ventilation for Acceptable Indoor Air Quality) OR your state or local code? Yes___ No X If yes, which standard is your school using?

2A5. Are local exhaust systems (including dust collection systems, paint booths, and/or fume hoods) installed at all major airborne contaminant sources, including science labs, copy/printing facilities, chemical storage rooms? Yes X No___

2A6. Has your school installed energy recovery ventilation systems where feasible to bring in fresh air while recovering the heating or cooling from the conditioned air? Yes___ No X

Contaminant Controls

2A7. Radon: Have all ground-~~contact~~ classrooms been tested for radon within the past 24 months? Yes X No ___
Radon testing is completed annually

What percentage of all classrooms with levels greater than or equal to 4 pCi/L have been mitigated in conformance with ASTM E2121? 0%

2A8. Carbon Monoxide (CO): If your school has combustion appliances, does your school have an inventory of all combustion appliances and does your school annually inspect these appliances to ensure no release of Carbon Monoxide (CO)?? Yes X
No No combustion appliances _____

Are CO alarms installed which meet the requirements of the National Fire Protection Association code 720? Yes ___ No ___
N/A X*

** CO alarms not required because boiler room intake has positive intake flow. Boiler will not operate unless vent is open and vented to outside. Boilers are regularly inspected.*

2A9. Mercury: Have all unnecessary mercury-containing devices been replaced with non-mercury devices, including florescent light bulbs? Yes X* No ___

All existing lighting technology containing high levels of mercury devices have been replaced with new more energy efficient systems that contain significant lower levels of mercury. Energy efficient fluorescent bulbs do contain very small amounts of mercury.

Does your school recycle or dispose of unwanted mercury laboratory chemicals, mercury thermometers, gauges and other devices in accordance with federal, state and local environmental regulations:

Yes X No ___

2A10. Chromated Copper Arsenate (CCA): Have all wooden decks, stairs, playground equipment or other structures treated with Chromated Copper Arsenate been either removed or sealed within the past 12 months? Yes ___ No ___ N/A X (no existing structures contain CCA)

2A11. Secondhand Tobacco Smoke: Is smoking prohibited on campus and school buses?

Yes X No ___

2A12. Asthma Control: Does your school have an asthma management program in place consistent with the National Asthma Education and Prevention Program's (NAEPP) Asthma Friendly Schools Guidelines?

Yes X* No ___

**Yes, our school participates in the Pediatric/Adult Asthma Coalition of New Jersey. It requires the school nurses to collect an asthma action plan that meets NJ Law N.J.S.A. 18A:40-12.8, that identifies students medication (whether it be a daily medication, or a fast-acting medicine), along with the triggers for asthma attack, and the emergency response. It also has a section that documents whether the student is capable and has been instructed in proper methods of self-administration, with a place for parent and physician signature. Parents and students are given this information in the beginning of the school year. In addition, each student with asthma has an Individualized Health Care Plan and an Emergency Action Plan in place so that everyone in the school knows what to do and who to call to manage an asthmatic attack. It contains emergency contact information so parents can be reached. I speak with the students that use inhalers and ask them to give me a return demonstration on how to use them, so I can assess their capability of proper usage. Yearly, I give the faculty and staff an in-service on management of chronic health conditions, with asthma being one of them. I include scenarios of what the staff can expect to see and what to do if they need to do to assist a student that is having difficulty breathing. Advisors/coaches of students involved in co-curricular activities are also given in-service on management of asthma. Some students use their inhalers before PE class, and they have access to them at all times. In addition, some students keep an extra inhaler in the health office in case of the likely event that they loose the one that they normally carry and need an extra one. These inhalers are kept in the emergency bag and are brought out of the health office with the school nurse when there is a fire drill or emergency drill. For every field trip, the school nurses review the lists of students that are going on the trip, and if the asthmatic student appears on the list, teacher advisor is reminded and they check that inhaler is in possession prior to going on trip.*

2A13. Indoor Air quality: Have you developed and implemented a comprehensive indoor air quality management program consistent with IAQ Tools for Schools? Yes X* No ___

*Classroom fresh air is replaced every 6 hours. In addition, classrooms are equipped with CO2 monitors. If recommended levels are exceeded, outdoor air dampers are opened fully. All ventilation complies with current state codes.

2A14. Moisture Control: Are all structures visually inspected on a regular basis and free of mold, moisture & water leakage?
Yes X No ___

Is indoor relative humidity maintained below 60% (cold climates during freezing temperatures should target 20--30%)? Yes X
No ___

Are moisture resistant materials/protective systems installed (e.g., flooring, tub/shower, backing, and piping)? Yes X
No ___

2A15. Chemical Management: Does your school have a chemical management program in place that includes the following elements:

[X] Routine removal of materials no longer needed for the curriculum, by disposal or donation

[X] Chemical purchasing policy, including low- or no-VOC products

[X] Chemical inventory

[X] Storage and labeling

[X] Training and handling

[X] Hazard communication

[X] Spills, clean-up and disposal

[*] Select EPA's Design for the Environment approved cleaning products

* 90% of cleaning products are "Green Seal Certified"

[X] Pesticides *None used

Yes ___ No ___ Explain _____

Air Quality Boilers, Heaters, Emergency Generators, Dust Collectors, Spray Booths, and Parts Washers

2A16. Boilers, Heaters, Emergency Generators, Dust Collectors, Spray Booths, and Parts Washers are sources of air pollution that may require a NJDEP air permit. Check here <http://www.state.nj.us/dep/aqm/Sub8.pdf> (section 8.2) to determine if you are required to obtain a NJDEP air permit for equipment at your school.

Does your school(s) have any equipment described above that requires an air permit?

Yes ___ No X

If Yes, have you obtained the required NJDEP air permit(s)?

Yes ___ No ___ N/A X

For older permits (> 10 years), NJDEP recommends obtaining a new air permit. See *3 below. Fuel burning equipment (Boilers and Heaters): See *1 below

Does your school(s) have any Boilers and/or heaters? Yes X No ___

If Yes then: Are they permitted with NJDEP? Yes X No ___ N/A ___

For older permits (> 10 years), NJDEP recommends obtaining a new air permit See *3 below.

Are any of these boilers/heaters certified to be energy efficient (energy star, etc.)? Yes X No ___

Boilers are Aerco Benchmark 2.k Low NOx boilers and are GreenSpec® certified, and certified by the South Coast Air Quality Management District (SCAQMD) and the Texas Commission on Environmental Quality (TCEQ) in its class. BMK2.0LN boiler is equipped with a low NOx burner and fuel delivery system that ensures emissions consistently measure <30 ppm of NOx corrected to 3% excess oxygen at all firing rates.

As a condensing boiler, the thermal efficiency of the BMK2.0LN increases when applied in a system that leverages cold return water temperatures. The unit's 20:1 turndown maximizes operating efficiency and seasonal fuel savings. Initial boundary tests indicate that efficiency up to 99.3% can be achieved when the unit operates at its lowest firing rate (5% input) with 60°F inlet water temperature. Even at full fire (100% input) the BMK2.0LN delivers 85.3% efficiency.

High School has 10 boilers, but boilers are not operated continuously. Boilers are programmed to start on demand. At any given time, only boilers that are needed are on.

Are any of these boilers/heaters equipped with air pollution controls (low NOx burners, particulate filters, etc.) to reduce air emissions? Yes No

If yes, then describe: *boiler is equipped with a low NOx burner and fuel delivery system that ensures emissions consistently measure <30 ppm of NOx corrected to 3% excess oxygen at all firing rates*

Do any of these boilers/heaters require annual combustion adjustments to reduce air emissions?

See *4 Yes No If yes, are you performing these adjustments and submitting the results to the NJDEP?

Yes No Adjustments are performed but results not sent to NJDEP. If No, then follow advisory. See *4.

2A17. Fuel burning equipment (Emergency Generators): See *1 below.

Does your school(s) have any Emergency Generators? Yes No

If Yes then: Are they permitted with NJDEP? Yes No N/A

For older permits (> 10 years), NJDEP recommends obtaining a new air permit. See *3 below.

Do you have any Emergency Generators equipped with air pollution control equipment (catalytic converters, particulate filters, etc.) to reduce air emissions? Yes No N/A

Are you aware of the recordkeeping requirements required by NJDEP? Yes No If No, then follow advisory. See *5 below

Are you aware that you can NOT operate Emergency Generators for testing and maintenance on days when the Department has forecasted a "bad air" day? Yes No If No, then follow advisory. See *5 below.

2A18. Storage Tanks:

Does your school(s) have any storage tanks containing VOCs (gasoline, etc.)? Yes No *

*No large storage tanks are required, but 3 five gallon gas cans for lawn mowers and 1 two gallon can for weed wacker are used.

If Yes then: Are they permitted with NJDEP? See *2 below. Yes No N/A

For older permits (> 10 years), NJDEP recommends obtaining a new air permit. See *3 below.

Element 2B: High standards of nutrition, fitness, and quantity of quality outdoor time for both students and staff

Food and Nutrition

2B1. Has your school earned USDA's HealthierUS School Challenge award for school food? Yes No

2B2. What percentage (by cost) of food purchased is certified as "environmentally preferable" (e.g. Organic, FairTrade, Food Alliance, Rainforest Alliance, etc.)? *Unknown - Food served in cafeteria is purchased according to state contract and guidelines*

2B3. What percentage (by cost) of food purchased is grown and processed within 200 miles of the school or what percentage is grown and processed with "geographic preference" in mind?

100% of fruits and vegetables served are purchased from farms in New Jersey under the New Jersey Department of Agriculture's "Jersey Fresh" Program

What percentage of food is grown on school grounds? 0%

What percentage of food is grown organically? *Unknown - Food served in cafeteria is purchased according to state contract and guidelines*

2B4. Does the school have an "onsite school garden" that students participate? Yes No

If yes, does the school garden supply food for the school cafeteria? Yes No

2B4.1 Describe how the onsite school garden is used as a teaching and learning tool. Describe the types of classroom applications and in what content areas.

The Green Team designed, planned, obtained and planted a native habitat garden to beautify a previously unused outdoor space. Benches were included for those who wanted to eat or read outside. Students currently regularly maintain, weed and mulch the garden. Garden is bordered by glass windows where flyers were posted listing each type of plant and information about the plantings - to educate students and staff.

2B4.2 Describe how your school offers alternative healthy choices for fundraising events that involve food. *Bernards High School students sell fresh oranges and grapefruits as annual fundraiser to benefit marching band.*

2B4.3 Describe how your cafeteria provides healthy food and beverage choices.

Our cafeteria follows state guidelines in terms of fat content (< 7%) and low sugar snacks. Additional healthy options that are served include fresh fruit and vegetables, milk, 100% juices, and water.

Physical Education, Outdoor Opportunities, and UV Safety

2B5. Describe how school-supervised physical education activities take advantage of outdoor spaces.

Gym class is always held outside if weather permits (temperature above 35 degrees and no precipitation or ice cover) Examples of outdoor gym activities include track and field, sports and cardio – held on the track and/or lower field. Two days a week are designated as “cardio days” in which students engage in cardio-fitness activities including running. Strides are also practiced using hilly areas.

2B6. Describe a unique or innovative health and physical education practice that uses outdoor spaces as a learning lab.

Peer Leadership Program /Project Adventure

As part of the Peer Leadership Board training, students attend the Project Adventure Youth Leadership Institute in Beverly, Massachusetts. The mission of Project Adventure – an innovative teaching organization – is to provide leadership in the expansion of Adventure-based experiential programming. Project Adventure seeks to develop responsible individuals, productive organizations and sustainable communities. Students stay in tents and in a uniquely constructed structure called a Yurt. One goal of this experience is to have the students completely present with each other. Eight Bernards High School Peer Leadership members spend five days at the Project Adventure’s Moraine Farm conference center in Beverly Massachusetts. The participants will be engaged in Adventure based initiatives, low and high ropes course elements, expeditions to the surrounding historic area including Salem, MA. And community service projects in Gloucester, MA through the Gloucester Museum School and Gloucester High school. One example of a community service project by peer leaders is to help repopulate a local river with clams by working with Gloucester High School’s clam breeding plant. This summer, This summer the students will return to Gloucester to work with Japanese fisherman - whose clams population was affected by the recent tsunami – to teach the reintroduction of clams process.

Peer leaders, in partnership with the Boys Club of New York, also participate in an outdoor rope course at Camp Cromwell in Martinsville, NJ

Adventure Club

Adventure club is extra curricular club – funded by the Youth Services in Somerset County in conjunction and the YMCA. The goal is to provide alternative after-school and weekend adventures to students. These include tours to New York, hiking, and a 3 day back-packing trips on the Appalachian Trail. Students learn about themselves through team building exercises and practice the concept of “Leave no Trace”. Adventure club students also participate in fund-raising walks, such as the Susan G. Komen walk for cancer.

2B7. To what extent do school homework policies influence students’ ability to engage in unstructured outdoor play?

The curriculum committee is currently considering limiting homework – especially during weekends and vacation breaks – to allow students more time to pursue other activities, including outdoor activities, such as sports, adventure club and Green Team activities.

2B8. What percentage of your current student body has participated in EPA's Sunwise Program or an equivalent program regarding UV protect and skin health?

100% of students are required to take “Life Skills”, a class that includes instruction in health issues and, in particular, skin health and UV protection. A section of “Life Skills” covers First Aid, in which students learn how to prevent sunburn, including the use of sunscreen, and how to treat burns including sunburn.

2B9. Describe any other measures regarding the school's built and natural environment that your school takes to promote student and staff health and which you feel should be considered.

Physical Education Class takes advantage of flat “lower field” to offer instruction in golf, Frisbee, flag football, baseball and softball.

Physical Fitness curriculum mandates 2 days per week to be ‘cardio’ days, and instructors make use of hilly terrain on grounds for strides and track for running.

This Winter, a new program was offered to Juniors and Seniors in which students could design their own fitness program and implement it for an entire marking period. Development of a program required extensive research and was carried out during normal gym periods.

As mentioned elsewhere in application, gym classes are held outside when possible.

Cross Country team takes advantage of hilly terrain to train runners. Weather permitting, athletics and marching band are practiced outside.

Outdoor benches are provided throughout the campus and in the courtyard garden

2B10. Describe any partnerships your school has made with community groups or private businesses to support student health and/or safety.

1. *Borough of Bernardsville Green Team collaborated with High School Green Team to sponsor electronic and computer recycling program (see question 1C11 for more details)*
2. *Battle of the Bands – High School Green Team organizes annual fundraiser open to public to raise funds and awareness of environmental concerns (for more details, see previous question “Has your school created a Green Team? “. Chaperones are present to ensure safety.*
3. *Bernards High School partners with American National Red Cross to make high school building an emergency public shelter. Bernard High School has agreed to make the food service resources of the school, including food, supplies, equipment and food service workers available to feed the shelter occupants. Bernards High School will also make its custodial resources, including supplies and custodial workers available to provide cleaning and sanitation services at the shelter. Bernards High School will keep shelter open as long as state of emergency or disaster exists and Red Cross determines that shelter is no longer needed.*
4. *Somerset Hills School district as a whole collaborates with the Borough of Bernardsville on the “Safe routes to School Program.”. A long-running goal to build sidewalks that would link Bernards High School with the elementary and middle schools was boosted by the award of a \$300,000 state grant. Bernardsville's grant was part of the state Department of Transportation's (DOT) Safe Routes to School program. A new sidewalk was completed last Spring near the High School and three more sidewalk projects are in being planned. As part of the program, the Borough agrees to maintain, improve and shovel sidewalks on Borough property. A Borough ordinance requires homeowners to maintain and shovel sidewalks, so as to be safe for walking.*
5. *Somerset Hills School District has established the “Town and School Committee” as a standing committee on the Somerset Hills Board of Education. Its mission is to promote communication and shared services. Areas of focus include pedestrian safety, traffic concerns, recreation and shared maintenance. Specifically regarding student health and/or safety, the Town and School Committee:*
 - *Worked for a period of 3 years on the development of a town/school sidewalk master plan*
 - *Constructed six new school/municipal tennis courts*
 - *Developed a traffic and pedestrian safety master plan*
 - *Constructed shared restroom and storage facilities for athletic fields and schools*
 - *Organized the Ridewise and AAA National “Walk to School” Day*
6. *Borough of Bernardsville approved and hired – in October 2011 – two new crossing guards to specifically address concerns at two intersections served primarily by high school students. Crossing guard at intersection in the center of town greatly benefits high school students who take the train by allowing a safer crossing between the train station and the school over State Road 202. The second crossing guard, at Olcott Avenue greatly benefits students who live within walking distance of school (and encourages walking) by providing for a safe crossing across busy Anderson Hill Road.*

2B11. Describe any other measures regarding the school's built and natural environment that your school takes to protect student and staff health and which you feel should be considered:

Physical Education Class takes advantage of flat “lower field” to offer instruction in golf, Frisbee, flag football, baseball and softball.

Physical Fitness curriculum mandates 2 days per week to be “cardio” days, and instructors make use of hilly terrain on grounds for strides and track for running.

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Cross Country team takes advantage of hilly terrain to train runners. Weather permitting, athletics and marching band are practiced outside.

Outdoor benches are provided throughout the campus and in the courtyard garden

PILLAR THREE: ENVIRONMENTAL AND SUSTAINABLE EDUCATION

Element 3A: Interdisciplinary learning about the key relationships between dynamic environmental, energy and human systems

3A1. Briefly describe how you quantitatively measure student environmental science literacy:

AP Environmental Science

Students in AP Environmental Science take the AP exam in May to measure their mastery of the class material and to determine if they qualify for college credit for the course.

The environmental science literacy is also measured with cumulative midterm and final exams, as well as grades given for tests, quizzes, research papers and field experience.

A-Level Environmental Science

Each marking period relies on 2 tests that each cover specific environmental content areas. In addition, students are required to complete a comprehensive power point project on any topic they chose that is related to the theme of that marking period. Other assessments, include data mining information from the internet and completing interactive web-based homework assignments related to specific environmental topics.

3A2. Describe your school's environmental or sustainability literacy graduation requirements:

Bernards High School does not have an environmental or sustainability graduation requirement, per se, but does follow state mandates that three sciences are required for graduation. Biology and chemistry are required, but the third science is a student choice and can be one of four environmental science classes offered (including AP Environmental science). Currently, 103 out of 780 total high school students take an environmental science class.

3A3. Describe how environmental science and concepts in sustainability are integrated throughout the curriculum:

AP Environmental Science

The central theme of the AP Environmental curriculum and textbook is sustainability. Each unit focuses on the science of the topic, whether it be endangered species, pollution, agriculture, etc. and then there are several days spent on how the actions of humans in that context (again whether it be agriculture, resource use, etc.) can be done sustainably. This is done through group projects, class discussions, and relevant movies or video clips.

A-Level Environmental Science

Each marking period has an environmental theme that builds in complexity and off of the previously learned material. Environmental topics are first defined at the physical science level and then related to the effects and impact that they have on our environment

In addition to the environmental science curriculum, the SEE program provides sustainability and energy-themed curriculum materials to teachers who request it. Energy-themed math problems and alternative fuel curriculum materials are the subjects most requested by teachers.

3A4. What percentage of last year's graduates last year completed Advanced Placement Environmental Science? 14%

What percentage of these students scored 3 or better on the Advanced Placement Environmental Science assessment? 89.65%
(26 out of 29)

3A5.1 To what extent are your students successful on the New Jersey Department of Education's science assessments?

*81% of students scored proficient or better on the New Jersey Biology Competency Test
(42% scored advanced proficient)*

NJASK4 ___ % of all students were proficient or better N/A

NJASK8 ___ % of all students were proficient or better N/A

New Jersey Biology Competency Test 81% of all students scored proficient or better (42% scored advance proficient)

3A5.2 Describe any honors or awards that your students have received in the past two years as a result of their academic or extracurricular activities with environmental issues or sustainability.

Each year a BHS senior is awarded an "Environmental Science Award" at the senior awards ceremony. Last year's recipient was Jillian DiFillipo. This award is given to a student who shows exemplary achievements in an environmental science class and involvement in the GreenTeam. Starting this Spring, an annual scholarship, entitled "The Cathy Sutcliffe Memorial Scholarship" will be available to students. This scholarship will reward one (or more) students who have showed a commitment to activities with an environmental impact and who plan to pursue a course of study in higher education that relates to the outdoors and/or environmental concerns.

3A6. Describe the professional development opportunities in environmental and sustainability education made available to all teachers in your school. What is the estimated percentage of teachers who have attended those opportunities?

The environmental science staff is given the opportunity to attend AP Environmental institutes and workshops

Specifically, the Advanced Placement Environmental Science teacher has:

- a. Attended an AP Summer Institute training week at Rutgers University (Summer 2010)*
- b. Took the “Special Issues in Environmental Science” class at Rutgers to prepare to teach APES (Summer 2010)*
- c. Planned and ran a field trip to Rutgers for my APES class to see the Ecological Preserve, Solar Farm, and Cogeneration Plant*
- d. Worked with Chuck Gullage of the Great Swamp Watershed Association – my APES class participated in the SWAMP Program (Student Water Monitoring Program) – Chuck and several other members of the Great Swamp came into my class 4 times for presentations and water monitoring*

3A7. Describe how your school's environmental education program emphasizes student active engagement in scientific practices, such as asking questions, developing and using models, planning and carrying out investigations, analyzing and interpreting data, using mathematics and computational thinking, constructing explanations, and engaging in argument and applications based on evidence:

AP Environmental Science

Students in AP Environmental meet for double period labs twice a week. During those lab periods (and during some regular class periods) students are involved in the following: debates about controversial environmental issues; field trip to Rutgers University to see the 700 acre solar farm, ecological preserve, and cogeneration plant; participation with the Great Swamps, “SWaMP” program – in which students monitor the water quality of Penns Brook to assist with the monitoring of the Raritan Watershed; an Inquiry Based Eco-column investigation in which students design, create, monitor eco-columns using 5 2-L soda bottles (each eco-column has an aquatic chamber, decomposition chamber, and terrestrial chamber), students bury a “landfill” in the courtyard and then dig it up in March to learn about decomposition rates of waste; students are involved in a “wedges” challenge in March during which they try to create the best solution to the global climate change issue (guest judges come in to rate their solutions)

A-Level Environmental Science

For this level environmental course the emphasis is on developing the students to become independent learners and thinkers. Assignments are designed to have students gather relevant information about specific environmental topics and structure it into a graphic organizer format. Tests are used to assess their base knowledge of each topic and give them practice in answering thought provoking subjective questions that have multiple possible answers but must be defended with relevant facts. Projects are structured to educate students on current environmental issues and to improve their techniques in creating and presenting subject presentations.

3A8. Describe the extent to which students are engaged in meaningful outdoor experiences (an investigative or experiential project that engages students in critical thinking, problem solving and decision making).

Some activities described in question 3A7 involve outdoor experiences such as:

- Water Monitoring of Penns Brook (this happens at least 3 times a year)*
- Biodiversity Lab where students sample different areas around the school and measure the biodiversity of them using the biodiversity indices*
- Burying and then digging up of the landfill*

Green Team activities include the outdoor courtyard garden. Students designed, planned, obtained and planted a native habitat garden to beautify a previously unused outdoor space. Benches were included for those who wanted to eat or read outside. Students currently regularly maintain, week and mulch the garden. Green team students also instituted a composting program. Compost will be used to enrich soil of garden.

3A9. Describe innovative or creative approaches that your teachers have embraced to integrate learning about the key relationships between dynamic environmental, energy and human systems.

AP Environmental Science

The above mentioned activities are designed to integrate these systems, primarily the “stabilization wedges challenge” – for more information, see <http://cmi.princeton.edu/wedges/>

A-Level Environmental Science

The first example for this was based on having the students utilize a chronological task sheet which had them print internet articles about the rainforest and its diversity for homework and highlight them in terms of key factual points. During this time a DVD on these same key points was shown on the rainforest. Following that, they did a similar exercise for a variety of

evolution articles that presented very different viewpoints and at the same time were watching an evolution DVD aligned to some of these articles. They were then given objective and subjective test questions that integrated the evolutionary process within the rainforest. The second example will run during the final marking period and will be based on a high level critique of global warming. It will be based on a step by step analysis of all direct and indirect factors that can influence this condition along with an attempt to rank these factors in terms of relative importance. The students final "work product" will be a binder that contains a table of contents, relevant articles to each factor, a graphic organizer that ranks and shows interrelationships for the factors, a comparison of today's factor variations with those experienced in Earth's history, and a conclusion giving their opinion as to the significance of CO₂ on global warming.

Element 3B: Use of the environment and sustainability to develop STEM content knowledge and thinking skills to prepare graduates for the 21st century technology--driven economy

3B1. Describe how you quantify graduates conceptual understandings in physical, life and earth systems sciences.

Students in AP Environmental Science take the AP exam in May to see if they qualify for college credit for the course. The environmental science literacy is also measured through midterm and final exams and final grades

What percentage of students take more than the minimum science requirement? 29%

How many hours per week on average do students spend in science classes at the elementary____, middle grades____ and high school 6.072 hours

3B2. Describe how your curriculum prepares and inspires students to pursue post--secondary options that focus explicitly on environmental and sustainability fields, studies, and/or careers?

Bernards High School offers four environmental science classes, including AP ES. Curriculum includes many hands on activities (referenced above) that give students an idea of the kinds of experiments that would be undertaken in University and/or career settings.

School offers new scholarship available to student(s) who intend to pursue course of study in outdoor subject with a focus on environmental issues.

The High School Green Team is the 2nd largest activity in the school (measured by number of student members) and undertakes numerous hand-on activities – referenced above

This year during earth week, the High School is planning an interactive presentation on sustainability in energy and new sources of energy. Presentations such as this introduce students to the many environmental/sustainable fields available as a course of study in University and as possible careers.

Community and Civic Engagement

Element 3C: Development of civic engagement knowledge and skills, and students' application of these to address sustainability and environmental issues in their community

3C1. Are all students required to conduct an age--appropriate, self--selected civic/community engagement project at every grade level? Yes X * which grades: 9-12 No__ If not in all grades, please specify

** Students are required to perform a minimum of 10 hours of community service learning hours per year. Special recognition is given to students who qualify for the "Century Club" - 100 hours of community service in one school year.*

What percentage of these projects focused on environmental or sustainability topics? *This is hard to quantify, but the service learning department estimates the number to be approximately 15%. Some examples of community service projects that focus on environmental or sustainability topics include: School courtyard garden, Clean up the town project, Battle of the Bands, SEE squads, electronic and computer recycling, recycling contest, composting project, Eagle Scout Projects, phantom load survey.*

What percentage of students satisfactorily completed such a project last year: *Same answer as previous question*

3C2. What percentage of last year's graduates scored proficient or better on a community or civic engagement skills assessment? 100 % *

** The school does not a formal "community or civic engagement skills assessment" , but 100% completed the service learning requirement*

3C3. Does your school partner with local academic, businesses, government, nonprofits, informal science institutions and/or other schools to help advance your school, other schools (particularly schools with lesser capacity in these areas), and community toward the 3 Pillars? Yes X No__

Briefly describe the scope and impact of these partnerships:

Sustainable New Jersey. The district's energy savings and sustainability initiatives earned points towards the Borough of Bernardsville's Sustainable certificate.

Partnerships (also detailed elsewhere in application) include:

Borough of Bernardsville Green Team collaborated with High School Green Team to sponsor electronic and computer recycling program

Battle of the Bands – High School Green Team organizes annual fundraiser open to public to raise funds and awareness of environmental concerns

Bernards High School partners with American National Red Cross to make high school building an emergency public shelter. Somerset Hills Schools District as a whole collaborates with the Borough of Bernardsville on the "Safe routes to School Program."

Somerset Hills School District has established the "Town and School Committee" as a standing committee on the Somerset Hills Board of Education. Its mission is to promote communication and shared services.

3C4. Does your school provide outdoor learning opportunities for students (e.g. outdoor classrooms)? Yes X No

If yes, describe how outdoor learning is used to teach an array of subjects in context, engage the broader community, and develop civic skills

Environmental Science Classes

Some activities described in question 3A7 involve outdoor experiences such as:

- Water Monitoring of Penns Brook (this happens at least 3 times a year)
- Biodiversity Lab where students sample different areas around the school and measure the biodiversity of them using the biodiversity indices
- Burying and then digging up of the landfill
- Field trip to Rutgers University to see the 700 acre solar farm, ecological preserve, and cogeneration plant; participation with the Great Swamps, "SWaMP" program – in which students monitor the water quality of Penns Brook to assist with the monitoring of the Raritan Watershed; an Inquiry Based Eco-column investigation in which students design, create, monitor eco-columns using 5 2-L soda bottles (each eco-column has an aquatic chamber, decomposition chamber, and terrestrial chamber), students bury a "landfill" in the courtyard and then dig it up in March to learn about decomposition rates of waste; students are involved in a "wedges" challenge in March during which they try to create the best solution to the global climate change issue (guest judges come in to rate their solutions)

Physical Education

Gym class is always held outside if weather permits (temperature above 35 degrees and no precipitation or ice cover)

Examples of outdoor gym activities include tack and field sports and instruction – held on the track and/or lower field. Two days each week are designated as "cardio days" in which students engage in cardio-fitness activities including running.

Strides are also practiced using hilly areas.

Green Team Outdoor Learning Opportunities

Green Team outdoor learning opportunities include the outdoor courtyard garden. Students designed, planned, obtained and planted a native habitat garden to beautify a previously unused outdoor space. Benches were included for those who wanted to eat or read outside. Students currently regularly maintain, weed and mulch the garden. Green team students also instituted a composting program. Compost will be used to enrich soil of garden and program is intended to expand to offer compost to teachers and parents.

Additional Outdoor Learning Opportunities

Peer Leadership Program /Project Adventure

As part of the Peer Leadership Board training, students attend the Project Adventure Youth Leadership Institute in Beverly, Massachusetts. The mission of Project Adventure – an innovative teaching organization – is to provide leadership in the expansion of Adventure-based experiential programming. Project Adventure seeks to develop responsible individuals, productive organizations and sustainable communities. Students stay in tents and in a uniquely constructed structure called a Yurt. One goal of this experience is to have the students completely present with each other. Eight Bernards High School Peer Leaders spend five days at the Project Adventure's Moraine Farm conference center in Beverly Massachusetts. The participants will be engaged in Adventure based initiatives, low and high ropes course elements, expeditions to the surrounding historic area including Salem, MA. And community service projects in Gloucester, MA through the Gloucester Museum School and Gloucester High School. One example of a community service project by peer leaders is to help repopulate a local river with clams by working with Gloucester High School's clam breeding plant. This summer, the students will return to Gloucester to work with Japanese fisherman - whose clam population was affected by the recent tsunami – to teach the reintroduction of clams process.

Peer leaders, in partnership with the Boys Club of New York, also participate in an outdoor rope course at Camp Cromwell in Martinsville, NJ

Adventure Club

Adventure club is extra curricular club – funded by the Youth Services in Somerset County in conjunction and the YMCA. The goal is to provide alternative after-school and weekend adventures to students. These include tours to New York, hiking, and a 3-day backpacking trips on the Appalachian Trail. Students learn about themselves through team building exercises and practice the concept of “Leave no Trace”.

Adventure club students also participate in fund-raising walks, such as the Susan G. Komen walk for cancer.

3C5. What other indicators or benchmarks (quantified whenever possible) of your progress towards the goal of 100% of your graduates being environmental and sustainability literate does your school feel should be considered by the review committee?

Bernards High School (BHS) is committed to a goal of all graduates being environmentally and sustainability literate. Towards that end, BHS offer four sections of Environmental Science, including AP ES. Currently, 64 out of 375 total Juniors and Seniors (Juniors and Seniors are eligible to take more than one science in any year) are doubling up on science this year. In addition to academics, BHS offers many extracurricular activities to educate and engage student in sustainability topics. These include Green Team, SEE activities, Earth Week activities, Adventure Club, Peer Leaders, Electronics and Computer recycling, Composting Program, Courtyard Garden, and Clean-up the Town project. Environmental/Sustainable projects completed by individual students fulfill the requirement of 10 hours of service learning. SEE Energy Savings Program strategies and results are communicated to all staff and students (newsletters, morning announcements, school activities, etc.) in order to contribute towards students understanding of the environmental impact of such programs.