U.S. DEPARTMENT OF EDUCATION

GreenRibbonSchools

School Nominee Presentation Form

ELIGIBILITY CERTIFICATIONS

School and District's Certifications

The signatures of the school principal and district superintendent (or equivalents) on the next page certify that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of their knowledge. *In no case is a private school required to make any certification with regard to the public school district in which it is located.*

1. The school has some configuration that includes grades Pre-K-12.
2. The school has been evaluated and selected from among schools within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental education.
3. Neither the nominated public school nor its public school district is refusing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district wide compliance review. The Department of Defense Education Activity (DoDEA) is not subject to the jurisdiction of OCR. The nominated DoDEA schools, however, are subject to and in compliance with statutory and regulatory requirements to comply with Federal civil rights laws.
4. OCR has not issued a violation letter of findings to the public school district concluding that the nominated public school or the public school district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
5. The U.S. Department of Justice does not have a pending suit alleging that the public school or the public school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
6. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the public school or public school district in question; or if there are such findings, the state or public school district has corrected, or agreed to correct, the findings.
7. The school meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

U.S. Department of Education Green Ribbon Schools 2015-2018

X Public ☐ Charter ☐ Title I ☐ Magnet ☐ Private ☐ Independent ☐ Rural

Name of Principal: Mr. Todd Hicks
(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in the official records)

Official School Name: Manchester Valley High School
(As it should appear on an award)

Official School Name Mailing Address: 3300 Maple Grove Road Manchester, Maryland 21102
(If address is P.O. Box, also include street address.)

County: Carroll State School Code Number *: 210761

Telephone: 410-386-1673 Fax: 410-386-1561 Web site/URL: https://www.carrollk12.org/schools/high/mvh

E-mail: hemcnet@carrollk12.org (Hannah McNett: Lead Teacher)

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

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

_____ Date: March 26, 2018
(Principal's Signature)

Name of Superintendent: Mr. Stephen Guthrie

District Name: Carroll County Public Schools

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

_____ Date: 3/27/18
(Superintendent's Signature)

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 to the best of the Authority's knowledge.

1. The school has some configuration that includes grades Pre-K-12.
2. The school is one of those overseen by the Nominating Authority which is highest achieving in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
3. The school meets all applicable federal civil rights and federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency: Maryland State Department of Education (MSDE)

Name of Nominating Authority: Dr. Carol Williamson

I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.

Carol A. Williamson Date: 3-26-18

SUMMARY AND DOCUMENTATION OF NOMINEE'S ACHIEVEMENTS

Provide a coherent summary that describes how your school is representative of your jurisdiction's highest achieving green school efforts. Summarize your strengths and accomplishments in all three Pillars. Then, include concrete examples for work in every Pillar and Element. Only schools that document progress in every Pillar and Element can be considered for this award.

SUBMISSION

The nomination package, including the signed certifications and documentation of evaluation in the three Pillars should be converted to a PDF file and emailed to green.ribbon.schools@ed.gov according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509
Expiration Date: March 31, 2018

Public Burden Statement

Lead Applicant Name: Ms. Hannah S. McNett (Science Teacher)

Lead Applicant Email: hemcnet@carrollk12.org Phone Number: (school) 410-386-1673 (cell) 410-259-2780

Does your school serve 40% or more students from disadvantaged households? No
Percent receiving FARMS: >14%
Percent Limited English Proficient: >3%
Overall annual student attendance rate: 95%

School District Name: Carroll County Public Schools (CCPS)
Is your school district one of the largest 50 in the nation? No
What is the total student enrollment? 1342-school; 25,200-district

Summary Narrative

Efforts to Reduce Environmental Impact and Costs
Beyond our solar light hallways, geothermal water and air heating and cooling systems, and student-generated "turn off the lights" mini-posters around light switches, Manchester Valley High School has come together to create an exemplar model for reduction in environmental impact and cost. The Director of Facilities Management of Carroll County Public Schools would agree. In an article published in 2013, Raymond Prokop announced, "…on a purely BTU per square foot basis, Manchester Valley is the most efficient school in the county..."

Our School Improvement Plan for the past two years has included goals of achieving recertification in being a Maryland Green School and achieving the US Green Ribbon School. Manchester Valley High School has a long tradition of having a green school culture and commitment to reducing environmental impacts and costs. Last spring, our students and staff celebrated being recertified as a Maryland Green School. Moreover, we were asked by the MAEOE recertification committee if our wiki-formatted recertification documentation could be used as an exemplar for other schools.

Through administrative, staff, and student driven efforts to reduce paper waste by pushing digital curricula, recycle and school composting programs, we have seen over 50% reduction in solid waste generated. Furthermore, since the school opening in 2009 we rely on school-wide automatic sink water shut-offs and water conserving native plants in our landscaping to conserve water. Our science and agriculture programs incorporate hydroponics to reuse water. To conserve electricity, lights are turned off after school hours and we have a "Watt Free Wednesday," where staff are encouraged to turn off the lights during school hours. Classrooms also have energy-saving, motion-activated timers for light switches. Using EPA standards, these practices in the past two years have enabled our school to cut greenhouse gas emissions by close to 50% per capita.

Methods of cost saving using alternative methods of agriculture such as aquaculture, innovative methods of recycling, and reducing impact with habitat improvements could not have been possible without the generous grant funding and mentoring from trusted names like the Carroll County Outdoor School, Northrup Grumman, Monsanto and the Chesapeake Bay Trust. Moreover, we have collaborated with various environmental leaders to bring in varied speakers and consultants in the field for our student lead in environmental impact reduction and costs with mentoring programs and career paths such as energy efficiency technologies, bat habitat restoration, and aquaculture innovations through the Boys Scouts of America's Eagle Scout Awards, water quality and fish habitat restoration methods through Trout Unlimited, Carroll County Forest Board, and Chesapeake Bay reef ball habitat restoration technologies through the Coastal Conservation Association. We are especially excited about our latest reduction in energy cost ideas grant funding, written by a Science Research and AP Biology student, from the BG&E's Bright Ideas grant received in November 2017.

Using the No Child Left Inside model, all classes are encouraged to be outside. Our picturesque wooded Outdoor Classroom is complete with seating and functional flat workspaces and maintained by students. We also provide a serene and shaded outdoor café-style breakfast and lunch area option for students that cannot only be used before and after school, during breakfast and lunches, but also is used frequently for staff meetings and class activities. “No Mow” zones on campus encourage pollinators and reduce soil erosion.

Our staff continually advocate for better use of resources and reduction of cost. For example, our cafeteria manager recently initiated a composting program. Science Research and Agriculture students have devised a plan to add this green manure to our four composters and ongoing soil insect biodiversity study used by biology and environmental science students. Teachers have also advocated for the school lights to be dimmed in underutilized areas of the school after school hours.

Improvements of Student and Staff Health

Manchester Valley High school is a school on the move. From fundraising walks like Relay for Life to supporting our Special Olympic athletes, to community races and the Polar Bear Plunge, we love our FitBits and we make miles count. From the MVHS Social Committee who offers to organize a team for upcoming Chesapeake Bay Bridge Half Marathon, to the Class of 2014’s Cinco de Mayo 5K, we have a run for all occasions. The tradition goes back since the first years the school opened. For example, we hold a Maverick Fun Run at the beginning of each school year for students; staff and the community to all join in. MVHS also organized a “Battle of the Bypass” annual run with a rival school. We even run just for fun. It is not unusual to see several staff members walking or running before or after school around the track, parking lots, or on our hiking trails.

A recent partnership with Life Bridge Health and the American Heart Association in donating CPR teaching aides and instructing students on use of AED’s allows our Health students life-saving knowhow. Also, periodic school-wide meetings incorporate requirements to update staff on use of Epi Pens, student and staff medical emergency procedural changes and reminders, and vaccination opportunities by our school nurse. Furthermore, we were the first high school in the county to hold a schoolwide symposium in collaboration with the Maryland States Attorney to inform students and the public on the scope and severity of the Opioid Epidemic.

Efforts to Provide Effective Environmental and Sustainability Education

Environmental literacy is a systemic and interrelated collaboration that extends beyond traditional isolated curricular islands. For example, a typical integration across curricula may look like this: A Science Research II student designs a hydroponic tomato experiment that was funded by an aquaculture grant written in her Ag Science class last semester funded by the Maryland Sea Grant College and NOAA. During the semester, she may be assisted by students in a program for special needs called Living For Independence. Her results are then recorded by a student in Script and Video Class and perhaps highlighted in the school newspaper and yearbook. Since it takes all summer to grow tomatoes, her final tomato product is then prepared the next by the students in Foods class or our kitchen staff for school lunches that early fall. Meanwhile, the green vegetable food scraps are taken back to the Science Research compost pile to be used for another student and to create habitat for bugs to be used in Biology classes for the bug behavior lab and the soil succession lab by Terrestrial Environmental Science students that following winter. Meanwhile, she will submit her written research to professional journals in the field. Last year, six of our students’ articles placed first or second with the Federation of American Aquarium Societies. Our students have also placed in the Carroll County Envirothon sponsored by the Carroll Soil Conservation District, which is in collaboration with the Maryland Department of Natural Resources, and the Carroll County Forest Conservancy District Board.

Meticulous Maryland Department of Health inspectors, MVHS School Safety Committee, and interdepartmental safety inspections and the incorporation of student data keeping in classes such Advanced Placement Environmental Science classes enable students to play an active role in collecting real-time data to assess school air quality.

Students learn civic skills through speaking engagement opportunities with an environmental and sustainability flare

such as the Aquarium Society of Lancaster County, FFA National Leadership Conferences, and Carroll Biz Challenge, sponsored by the Carroll County Chamber of Commerce. Specifically, the Owings Mills based company, Tetra Tech has donated materials, provided speakers, and green technology internship opportunities for Agriculture, Technology Education, and Science Research students.

Below is the Manchester Maverick's Going Green Manifesto.

#1 Green Is Fun. Students like to be outside. At Manchester Valley High School, we have created a culture of being outside. Whether in a math class, art, or even at lunch, we provide able opportunities for staff and students to recognize the limitless opportunities, aesthetic and economic values, and fragility of the natural world.

#2 Green is yesterday, today, and tomorrow. Learning effective environmental and sustainability takes a lifetime and that is why students have environmental opportunities in every grade, and academic level, and extra- curricular opportunity. This is a core environmental commitment with a history and longevity; we at Manchester Valley High School are willing to make for our students and community.

#3 Good Green Stewards. Our students know the intricate relationship between a healthy ecosystem and personal health. Therefore monitoring our student's health takes the same constant vigilance and assessment as maintaining a safe and healthy building. We are responsible for constant monitoring and discussing not only ecological issues but also tend to our student and staff needs to maintain sound and balanced minds, bodies, and emotions.

#4 Green is a verb, not an adjective. Although cross-curricular book-based studies are valued, we emphasize the practical application of STEM and green technologies through vigilance and community partnerships.

#5 We are the Manchester High School Mavericks and we are Green. A maverick is someone who boldly leads in a new direction. We Mavericks want to pioneer our state in innovative methods to reduce environmental impact and costs, reinvent approaches to improve student and staff health, and redefine in environmental and sustainable education.

1. Is your school participating in a local, state or national school program, such as EPA ENERGY STAR Portfolio Manager, EcoSchools, Project Learning Tree, or others, which asks you to benchmark progress in some fashion in any or all of the Pillars?
(X) Yes: Maryland Green Schools Recertification in 2017

2. Has your school, staff or student body received any awards for facilities, health, or environment?
(X) Yes

2017 Students awarded Chesapeake Bay Trust $5,000 school habitat improvement grant

2017 BG&E Bright Ideas Teacher's Grant for use in student research on hydroponics

2017 Recertification of Maryland Green Schools by MAEOE (Maryland Association of Environmental and Outdoor Educators) The association asked if our school's submission wiki website could be used as an exemplar for other schools.

2016 Federation of American Aquarium Societies 2016 Publication Awards four 1st place awards and two 2nd place awards by Science Research student research papers on biodiversity and water quality.

2016 Lancaster Aquarium Club $700 Grant for Science Research students for sustainable Aquaculture.

2016 Sensory Garden Grant for the Early Childhood Education Program in partnership with the Carroll County Outdoor School and presented at the MAEOE (Maryland Association of Environmental and Outdoor Educators)

2016 Ag Science and Science Research programs received funding from a $25,000 countywide grant the America's Farmers Grow Rural Education Foundation for collaboration in STEM and aquaculture research

2016 Our Envirothon Team won second place at the Carroll County Envirothon, funded by the Carroll Soil Conservation District and in collaboration with the Maryland Department of Natural Resources

2015 Students wrote and received a $1000 grant for the Maryland Sea Grant (NOAA) to use computer programming format called Raspberry Pi to perform water quality functions for aquaculture applications within agriculture and science research courses. See the website:

2015 Student earned his Eagle Scout Award for design and construction of 700 gallon sustainable aquaculture system to be used in Science Research classes

2015 Eagle Scout Award earned by Ted Preister, a Manchester Valley High School student for designing and building an environmental sign to be used in our school's outdoor classroom.

2015 Our MVHS Envirothon Team won third place at the Carroll County Envirothon, funded by the Carroll Soil Conservation District and in collaboration with the Maryland Department of Natural Resources

2015 National Forest Foundation Grant awarded for use with the American Chestnut Foundation for classroom forestry studies and field laboratory safety equipment

2014 Grant Northrup Grumman STEM Grant received for Science Research student projects with a focus on innovations in aquaculture technology.

Pillar I: Reduced Environmental Impact and Costs

Energy

1. Can your school demonstrate a reduction in Greenhouse Gas emissions?

(X) Yes Percentage reduction: _56.5% per person reduction Over (m/yy - m/yy): 9/2015 – 9/2017

How did you calculate the reduction?

Using the EPA' green vehicle standards, the average car emits 4.7 metric tons per year or 580 gal of GHG in a 180 day school year. Our school has eliminated the number students driving to school since the 2015-2016 school year. To cut down on the number of single drivers, the school has issued less student parking permits by per capita. This means that more students are either riding the bus, walking, or carpooling, thus reducing our GHG. Then we went from 1148.4 MT of GHG to 882 MT of GHG for fuels alone. Using the EPA's GHG emission calculator, if 82% of all greenhouse gasses created are from carbon dioxide then we reduced our carbon dioxide emissions by over 63%.

Also, we are now using about 50% less electricity per person (see the calculations on this in the Green Ribbon Application on page 5). If we use the 50% reduction of electricity per person data and 63% reduction in transportation data, the average is 56.5% reduction in CO_2 in metric tons per person. We also have school-wide weekly reminders to conserve energy and teach about our geothermally driven school in several classes.

2. Do you track resource use in EPA ENERGY STAR Portfolio Manager? ( ) Yes (X) No
If yes, what is your score? N/A

3. **Has your school reduced its total non-transportation energy use from an initial baseline?** (X) Yes ( ) No
Current energy usage (kBTU/student/year): July 2016 – June 2017) or one year
= 11,852,063 kBTU / 1342 students / 1 year
= 8,832 kBTU per student during the 2016-2017 school year

Current energy usage (kBTU/sq. ft./year): = 12,015,907 kBTU / 260,000 sq. ft. / 1 year
= 46.2 kBTU per sq. ft. / 1 year
Percentage reduction: 50.4% over (m/yy - mm/yy): 7/2015 – 6/2017

How did you document this reduction?
Data were obtained from Microsoft Excel data e-mail from Michael Andrews, Supervisor of Facilities Maintenance and Operations, Carroll County Public Schools, e-mail at maandre@carrollk12.org
(July 2015 – June 2016) or initial year (compared to second year 7/2016- 6/2017)
= 12,015,907 kBTU / 674 students / 1 year
= 17,828 kBTU per student during the 2015-2016 school year
So if…
= (8,832 kBTU - 17,828 kBTU) / (17,828 kBTU) x 100
= 50.4% reduction in kBTU per student in between July 2015 & June 2017

4. What percentage of your school's energy is obtained from?
The school's electricity is supplied by Baltimore Gas and Electric Company. According to the independent statistics and analysis company EIA,(U.S. Energy Information Administration), 61.3% is nuclear power plants, 18.3% from coal burning power plants, and 20.4% from renewable sources of energy.

On-site renewable energy generation: 100% of heating and hot water Type: Geothermal

Participation in USDA Fuel for Schools, DOE Wind for Schools or other federal or state school energy program:
We are a LEED School (Leadership in Energy and Environmental Design), based on utility of sunlight throughout the building and efficiency

5. In what year was your school originally constructed? 2009
What is the total building area of your school? 260,000 square feet

6. Has your school constructed or renovated building(s) in the past ten years? (X) Yes ( ) No

For new building(s): Percentage building area that meets green building standards: 60% based on standards set by the Smart Growth EPA standards as of January 2017

Certification and year received: N/A Total constructed area: N/A

For renovated building(s): Percentage of the building area that meets green building standards: N/A Certification and year: N/A Total renovated area: N/A

Water and Grounds

7. Can you demonstrate a reduction in your school's total water consumption from an initial baseline?

Average Baseline water use (gallons per occupant): = (5,073 gal / 36 months /674 occupants)
= 0.21 gal per occupant

Current water use (gallons per occupant): = (1568 gal / 12 months / 1442 occupants)
= 0.09 gal per occupant

Percentage reduction in domestic water use: 57.1% reduction in water use per person

Percentage reduction in irrigation water use: Our school only waters the stadium athletic field periodically.

Time period measured (mm/yyyy - mm/yyyy): 12/4/2013 to 9/1/2017 (48 months)

How did you document this reduction (ie. ENERGY STAR Portfolio Manager, utility bills, school district reports)?
Utility bills from the Town of Manchester

8. What percentage or your landscaping is considered water-efficient and/or regionally appropriate? About 80% of current plants are native or water efficient. In the fall of 2017, we were awarded a $5,000 grant from the Chesapeake Bay Trust to replace the non-native plants from a 10,400 square foot bed with water efficient native plants. This should increase our percentage to 90% in the spring of 2018.

Types of plants used and location:
The front of the building is predominated landscaped by two native and desiccant resistant plants, Virginia sweet spire (*Itea virginica*) and ink berry hollies (*Ilex veritculata*). Furthermore, the large shade trees planted throughout the campus are predominantly native oak, maples, and crabapple hybrids (*Pyrus coronaria).* These species do not require any extra watering and are drought resistant. The flower beds are predominantly sedum species, which are very drought resistant. Each year students remove invasive, non-native plant species most notably English ivy (*Hedra helix*) and garlic mustard (*Alliaria petiolata).* In the spring, our school's chapter of the FFA also holds flower, fruit, and herb sales. Some of these plants are used to promote pollinators around campus.

9. Describe alternate water sources used for irrigation. (50 words max)
We have rain barrels set up in non-freezing months used for the horticulture classes and Science Research classes when growing plants. The water used in hydroponic and aquaculture classes is reused for traditionally grown plants in Ag Science and Science Research classes.

10. Describe any efforts to reduce storm water runoff and/or reduce impermeable surfaces. (50 words max)
About 20% of road surfaces use permeable asphalt. Athletic fields are aerated to promote infiltration. Rooftop storm water collection and drains are designed to slowly diffuse the flow of runoff. Lava rock was installed in some beds to slow soil erosion from storm water and increase percolation rates.

11. Our school's drinking water comes from: (X) Municipal water source ( )Well on school property ( ) Other:

12. Describe how the water source is protected from potential contaminants. (50 words max)
The school is tested about every 6 years according to quote from John Timcheck, Coordinator of Environmental Safety for Carroll County Public Schools. The latest test results were late 2016 to early 2017. A school-wide report is sent to staff and parents.

13. Describe the program you have in place to control lead in drinking water. (50 words max)
In the spring of 2017, the sinks with elevated levels of lead levels were replaced with PVC. Social and printed media went out to parents informing of the lead testing results.

14. What percentage of the school grounds are devoted to ecologically beneficial uses? (50 word max)
About 30% of school grounds are ecologically devoted including two outdoor classrooms, a 10,400 square foot bed to be converted to a pollinating garden, a wetland designated as an endangered bog turtle habitat, a system of wooded hiking and streamside trails and "no mow zone" wildflower areas.

Waste

15. What percentage of solid waste is diverted from landfilling or incinerating due to reduction, recycling and/or composting? Complete all the calculations below to receive points.

A - Monthly garbage service in cubic yards (garbage dumpster size(s) x number of collections per month x percentage full when emptied or collected): (3 dumpsters) (8 cubic yards) (emptied 8 times per month) (an average of 75% full when collected)
= 144 cubic yards

B - Monthly recycling volume in cubic yards (recycling dumpster sizes(s) x number of collections per month x percentage full when emptied or collected): (1 dumpster) (8 cubic yards) (emptied 4 times a month) (often over 100% full – say 110%)
= 35.2 cubic yards

C - Monthly compostable materials volume(s) in cubic yards (food scrap/food soiled paper dumpster size(s) x number of collections per month x percentage full when emptied or collected): 0 cubic yards

Recycling Rate = ((B + C) ÷ (A + B + C) x 100)

= (35.2 cubic yards / 144 cubic yards) x 100

= 24.4% of materials is composted

Monthly waste generated per person = (A / number of students and staff):
= 144 cubic yards / 1,442 student and staff
< 0.1 cubic yards per person per month approximately

16. What percentage of your school's total office/classroom paper content is post-consumer material, fiber from forests certified as responsibly managed and/or chlorine-free? Manchester Valley High School orders paper from the Carroll County Public High School bidder W.B. Mason. We uses the "Flagship" type that, according to the website is "green," is responsibly managed and contains less than 30% post-consumer material.

17. List the types and amounts of hazardous waste generated at your school:

Flammable liquids	Laboratory grade alcohols (ethanol and isopropyl) Gasoline Paint in the Art, Drama and Technology classes	Amount: 1 gallon Amount: 25 gallons Amount: 4 gallons

Corrosive liquids	Laboratory grade acids and bases Amount: 2 gallons
Toxics	Laboratory grade alcohols (ethanol and isopropyl) Amount: 1 gallon Gasoline Amount: 25 gallons Paint in the Art, Drama and Technology classes Amount: 4 gallons Laboratory grade acids and bases Amount: 2 gallons
Mercury	We are a mercury-free school. Amount: 0 gallons
Other	1. We are an asbestos-free school. No item can be purchased containing asbestos. No items containing asbestos can be moved into MVHS. For example during the summer of 2016, after the closure of North Carroll High School and moving items into MVHS, careful inspection of science laboratory tables, specifically, was conducted. 2. The air-handling system was re-evaluated and filters replaced last year in the technology education area and fume hood replaced in science labs. 3. Material Safety Data Sheet information is in print form in each room and is also provided through the Carroll County Public School website.

How is this measured? Our school has a schoolwide Safety Committee which meets regularly to assess safety issues such as hazardous substances. In addition, other departments, such as the Science Department, conduct a more thorough monthly safety check. School maintenance routinely monitors chemicals and toxins. The Carroll County Health Department does unannounced inspections annually or biennially. The Fire Marshall conducts routine inspections at least once a year.

How is hazardous waste disposal tracked?
A comprehensive maintenance plan is updated annually which includes protocols for hazardous waste disposal tracking via the Carroll County Public School's website and published materials.
The Director of Facilities Management sent out a memo in 2010 to all staff prohibiting the use of any chemical or pesticide in the building or on the grounds that staff purchased outside of the safety protocol stated.

Describe other measures taken to reduce solid waste and eliminate hazardous waste. (100 word max)
Teachers are increasingly using online formats that reduces paper used for assignments including Microsoft One Note for submitting assignments and Quizlet and Socrative.com for assessments. In addition, schoolwide activities such as Key Club's "Haunted Hallways" drama production props tout over 50% from post-consumer materials, reused annually, and are made using non-toxic paints and adhesives. Our students participated in the Bags to Beds Program reusing over 4000 plastic grocery bags to help make bed for the homeless. We also have a schoolwide used battery and cell phone depository to help reduce toxins from entering local landfills.
18. Which green cleaning custodial standard is used? Most products our school uses can be found under the EPA's "Safer Choice" program. According to the letter sent by Ray Prokof, Director or Facilities Management, to all Carroll County Public School employees, no chemicals can be brought in from home and all chemicals must be CCPS approved.

What percentage of all products is certified? All chemicals must meet green standards.

What specific third party certified green cleaning product standard does your school use? EPA standards

Alternative Transportation

19. What percentage of your students walk, bike, bus, or carpool (2 + student in the car) to/from school? (Note if your school does not use school buses) 2% walk, < 1% bikes, 50% ride the bus, 28% carpool
How are these data calculated? (50 word max) Student emergency cards were analyzed and an oral survey was given in the fall of 2017 during lunches to over 700 students. This is an estimated 10% decrease in single car riders and increase in bus riders and carpoolers.

20. Has your school implemented?
[ ] designated carpool parking stalls.
[ ] a well-publicized no idling policy that applies to all vehicles (including school buses).
[X] Vehicle loading/unloading areas are at least 25 feet from building air intakes, doors, and windows.
[X] Safe Pedestrian Routes to school or Safe Routes to School

Describe activities from your safe routes program.
Multiple staff monitor and control the speed and flow of traffic to and from school property. Areas are chained off which promote slowing speeds in congested areas where students could be struck by on-coming traffic. There is a frequent presence and monitoring of student travels by local and state police.
21. Describe how your school transportation use is efficient and has reduced its environmental impact.
The reduction of the number of cars allowed on campus per student has increased the number of students carpooling and increased bus-commuting percentages in the last two years. The environmental efficiency also translates into time efficiency so that fewer students are actually late to school.

22. Describe any other efforts toward reducing environmental impact, focusing on innovative or unique practices and partnerships. We have four compost bins around the campus to reduce plant-based solid waste from going into the dumpster. We hold schoolwide-weeding events to reduce herbicides needed. We use turn off all non-essential lighting after school hours, have zoned air-conditioning, and use motion detecting light switches to reduce electricity when the room is not occupied. To promote schoolwide environmental awareness, our school participates in "Watt Free Wednesdays," were teachers are encouraged to turn off their lights on Wednesdays. Staff are also encouraged to bring laptops to meetings as opposed to paper agendas.

Pillar 2: Improve the health and wellness of students and staff

Environmental Health

1. Describe your school's Integrated Pest Management efforts, including IPM/green certifications earned, routine inspections, pest identification, monitoring, record-keeping, etc.:
Prevention is our primary method of pest management. By keeping food and excess water out of the main section of our school, we can keep pests such as ants and mice down. Secondly, mechanical as opposed to chemical options are employed. Therefore, instead of poisons, traps are set for mice and knocking down wasp nests are primarily used instead of chemicals. Our school complies with the Carroll County Public Schools protocols for IPM's according to the *Plant Operations Manual* Section 5 "Health and Safety". This section focuses on indoor protocols with inspections, pest identification, monitoring, and record keeping. The second protocol is for outdoor grounds keeping is in Section 8 "Grounds Care in the Plant Operations Manual." Furthermore, Ray Prokof, Director of Facilities Management sent out a memo in 2010 to all staff prohibiting the use of any chemical or pesticide in the building or on the grounds that staff purchased. Pesticides allowed by Carroll County Public Schools are in the Material Safety Data Sheet information is in print form in each room and is provided through the Carroll County Public School website: A comprehensive maintenance plan is updated annually.

2. What is the volume of your annual pesticide use (gal/student/year)? Describe efforts to reduce use: We have been fortunate to limit pest problems. In the 2016-2017, we sprayed for ants one time in a limited part of the school. The estimated pesticide use was 0.25 gallons/1342 students/year which equals 1.86×10^{-4} gal or (0.000186 gal) last year per student. The limited use of chemicals is due to our school's proactive approach. We encourage students to only bring in water bottles, not sticky drinks that can spill or food that can attract bugs. The staff are encouraged to seal up or refrigerate all food in the staff rooms. Also, the custodians are vigilant and thorough daily in vacuuming and wiping up countertops and emptying trash bags to prevent infestations. We hold schoolwide-weeding events and when planning gardens, install weed barriers to eliminate the need for weeds.

3. Which of the following practices does your school employ to minimize exposure to hazardous contaminants? Provide specific examples of actions taken for each checked practice.

[X] Our school prohibits smoking on campus and in public school buses. Suspected students or staff not adhering to the no smoking protocols are reviewed by the administration.

[X] Our school has identified and properly removed sources of elemental mercury and prohibits its purchase and use in the school. Jim Peters, Science Supervisor for Carroll County Public Schools frequently reminds science teachers of these protocols when ordering materials in e-mails. He also oversaw the move from North Carroll High School to Manchester Valley High School to ensure no mercury products entered the school.

[X] Our school uses fuel-burning appliances and has taken steps to protect occupants from carbon monoxide (CO) Our school does not use fuel-burning appliances in the building, only for outside school grounds

[X] Our school does not have any indoor fuel burning combustion appliances

[X] Our school has tested all frequently occupied rooms at or below ground level for radon gas and has fixed and retested all rooms with levels that tested at or above 4 pCi/L OR our school was built with radon resistant construction features and tested to confirm levels below 4 pCi/L.

[X] Our school has identified any wood playground or other structures that contain chromate copper arsenate and has taken steps to eliminate exposure. We do not have any wood playground structures on campus. Our outdoor classroom wood is make from untreated lumber and concrete.

4. Describe how your school controls and manages chemicals routinely used in the school to minimize student and staff exposure. (100 word max) Efforts have been made to reduce types and amount of chemicals used or stored at MVHS by our school Safety Committee. Thorough evaluations of inventory and storage by many departments where chemicals are routinely used are performed monthly. Although rarely used, protocol mandates pesticide notification flyers are placed on doors with specific product and application times. Application is done after school hours.

5. Describe actions your school takes to prevent exposure to asthma triggers in and around the school. (100 word max) Specific sawdust collecting air handling systems were purchased in 2016 in the Tech Labs to reduce particulate matter. Aerosol use is limited to staff only bathrooms. Special air handling systems are used for "paint rooms" for products with fumes used inside or to use products outside and 25 feet away from ventilation intakes. In 2016, chemical fume hoods in the A100's science wing were reevaluated by the county protocols.

6. Describe actions your school takes to control moisture from leaks, condensation, and excess humidity and promptly cleanup mold or removes moldy materials when it is found. (100 word max) Drop panels having signs of water damage are immediately replaced, fans are placed where water has been sitting or wood or tiles has been soaked. Pipes are regularly checked for leaks in sinks. During warm temperature months, when relative humidity level in a school building is above 55%, de-humidification is enabled through the Energy Management System where applicable. Cooling remains on in the area being shampooed until carpet is completely dry to prevent mold and mildew. See the protocols in the Maintenance Department Procedural Manual.

7. Our school has installed local exhaust systems for major airborne contaminant sources.

(X) Yes ( ) No

8. Describe your school's practices for inspecting and maintaining the building's ventilation system and all unit ventilators to ensure they are clean and operating properly. (100 word max) Air handling filters are replaced at least two times a year. Inspections of dust and chemical fumes are monitored. For example, in 2016, the chemistry fume hood ventilation system was replaced. Also In 2016, the air-handing system for dust collection in the technology education labs were retrofitted. Protocols are followed using the Carroll County Public School's Plant Operations Manual.

9. Describe actions your school takes to ensure that all classrooms and other spaces are adequately ventilated with outside air, consistent with state or local codes, or national ventilation standards. (100 word max)
Special air handling systems are used for "paint rooms" for products with fumes used inside or to use products outside and 25 feet away from ventilation intakes. Aerosol use is limited to staff only bathrooms. Staff are reminded not to bring in air fresheners, candles, or aerosols from home via semi-annual e-mails and in staff meetings. For anatomy and foods classes, fans are placed strategically for additional ventilation. Small Engine Repair classes follow ventilation guidelines for volatiles such as gasoline.

1**0. Describe other steps your school takes to protect indoor environmental quality such as implementing EPA IAQ Tools for Schools and/or conducting other periodic, comprehensive inspections of the school facility to identify environmental health and safety issues and take corrective action. (200 word max)**
Also, MVHS has eliminated the use of chalkboards in favor or whiteboards and smartboards. Furthermore, incorporation of low VOC (volatile organic compounds) throughout the Maintenance Department and control within the Science, Art, Drama, and Ag Science, and Technology Education departments is strictly adhered. For example, use spray paint is discouraged and may not be used inside in any room accept the paint room in the Technology Education section. In addition, our Athletics and Physical Education Department often considers altered practice and game schedules when heat index above 105 degrees Fahrenheit or on "Red" air quality days. Wet field laboratory equipment like shoes or dip nets are placed by fans or outside to dry quickly to prevent mold. In addition, AP Environmental Science students perform the Airborne Particulates Laboratory and report outside and anthropogenic air pollution sources and findings to the Head of Maintenance and teachers' rooms affected. Special care instructions and medical protocols are in place by the school nurse to communicate with parents and teachers, of students with compromised respiratory systems. Strict field trip and outdoor outside laboratory protocols are in place to ensure inhalers and emergency response is in place.

Nutrition and Fitness

11. Which practices does your school employ to promote nutrition, physical activity and overall school health? Provide specific examples of actions taken for each checked practice, focusing on innovative or unique practices and partnerships. (100 word max each or whatever you choose to make them!)
The cafeteria lines are decorated with captivating posters and informational material for students and staff. For example, one specifically promotes incorporating more fresh fruits and vegetables in your diet. Two examples include the "Choose My Plate" information for healthier food choices and portion control ideas. Snacks meet the Federal Smart Snacks in Schools requirements. Vending machines are not on until after school hours and offer healthier options such as bottled water, multigrain, portion controlled sizes and lower sodium items.

[X] Our school participates in a Farm to School program to use local, fresh food.
In September 2017, by Our FFA chapter went to Spring Garden Elementary School to promote the "Homegrown School Lunch Week" article in the *Carrol County Times* and provides nutritional information to the parents in the Carroll County Public Schools Website. Our school adheres to the new federal regulations for portion control and increasing availability of fresh food options.
[X] Our school has an on-site food garden. We have hydroponic systems that grow food. Last year we produced an estimated 300 tomatoes, a variety of herbs, and other plant species in the Science Research classes.

[X] Our school garden supplies food for our students in the cafeteria, a cooking or garden class or to the community. Our Ag Science classes and FFA chapter hold an annual spring plant sale for staff and our community. Also, our Child Development classes wrote a grant and built a Nature Sensor Garden for pre-school children in our community. One aspect of the garden is the herbs. Produce from our aquaponics system were also donated to a local food pantry in 2017.

[X] Our students spent at least 120 minutes per week over the past year in school supervised physical education. Students have 80-minute mods for physical education classes. During SET time (a flexible mod in the middle of the day) physical activities are available. Science classes have laboratory activities that involve hiking throughout the campus. The objective of one laboratory specifically has to do with measuring heart rate. Whenever relevant classes from any academic area make use of our outdoor classroom. This involves a 10-15 minute walk across campus.

[X] At least 50% of our students' annual physical education takes place outdoors. Weather permitting, more than half of the semester is spent outside in most physical education classes. The exception is the Weight Training, where students run and incorporate calisthenics while outside for about ten minutes.

[X] Health measures are integrated in assessments. Part of the physical education and health curricular objectives are to learn how to assess your own BMI and set short and long-term health goals. Student keep an ongoing journal of data collected in class. Students are encouraged to use applications such as the Apple Fit Bit and record-keeping cell phone applications. A focus on use of current CPR and AED uses are incorporated into Health I classes.

[X] At least 50% of our students have participated in the EPA's Sunwise (or equivalent program).
All students must take Health I, which incorporates the understanding risky behaviors like chronic sunbathing, Biology I which focuses on the causes of cancer, and Physics I, which explains the electromagnetic spectrum). Furthermore, some elective courses also incorporate Sunwise principles including Aquatic Environmental Science which correlates the effects of UV on aquatic organisms as indicators of human health, and Terrestrial Environmental Science which measures albedo rates and human health risks in climate change trends, and Anatomy & Physiology, where students research symptoms and types of skin cancer.

12. Describe the type of outdoor education, exercise and recreation available. (100 word max)
Students can take six different physical education classes. Additionally, we offer fifteen sports at the Junior Varsity and Varsity level as well as three corollary teams. For each of the seasons of sports, there are after school and summer conditioning and training. In the Science and Ag Science course, we offer seven courses, all incorporating outdoor field laboratory experiences. Our “Campus Clean-Up Days,” is sponsored by the SGA or Enviro Club. Because our campus was built on top of a large hillside, we get plenty of exercise.

13. Describe any other efforts to improve nutrition and fitness, highlighting innovative or unique practices and partnerships. (100 word max)
Inspiring guest speakers for students include former student and Olympian Triathlete Katie Zaferes. Captivating monthly newsletters are available to students and parents including “Eat Your Water” and “Off The Griddle.” Our cafeteria staff provide salads and a wide variety of fresh fruits and vegetables. No food is deep-fried nor buttered. Annually, students organize a health fair that includes projects on nutrition. Health classes incorporate lessons on making healthy smoothies and reducing sources of refined sugar. English and Ag Science classes analyze the video *Food Inc*. which discusses the limited availability of healthy food options to disadvantaged communities.

Coordinated School Health, Mental Health, School Climate, and Safety

14. Does your school use a Coordinated School Health approach or other health-related initiatives to address overall school health issues? (X) Yes ( ) No

If yes, describe the health-related initiatives or approaches used by the school:
The school nurse provides annual safety updates to administrators and staff such as protecting students and staff from exposure to disease, and refreshes protocols on anaphylaxis and practicing administration of the Epi-pen. She also provides continual e-mail reminders to keep her in the loop when students are outside with bee sting allergies and to eliminate environmentally triggered allergies such as nuts or latex.

15. Does your school collaborate with any postsecondary institutions, businesses, nonprofit organizations, or community groups to support student health and/or safety? (X) Yes ( ) No

If yes, describe these partnerships:

- Partnership with Life Bridge Health and the American Heart Association in donating CPR teaching aides and instructing Health I students on use of AED's. The partnership was featured in the *Carroll County Times* in 2017.
- Annual Relay for Life events volunteer opportunities open to all students and staff to promote cancer awareness and promote fitness as a school community.
- Annual Special Olympics student and staff volunteer "huggers" for our students with special needs. Our school involvement was featured in the *Carroll County Times* in 2015.
- The Student Government Association holds two blood drives through the American Red Cross at our school.

Student Government Association raises thousands of dollars in past years to the "No Shave November" campaign that partners with Prevent Cancer Foundation, St. Jude's Children's Hospital, and the Fight Colorectal Cancer Coalition.

- This is the second year our school has offered students flu vaccinations through the Carroll County Health Department at our school over 100 students participated.
- First high school in the county to hold a schoolwide symposium to inform the public on the local Opioid Epidemic in collaboration with the Maryland States Attorney and Carroll County Public Schools. An article was featured in the *Carroll County Times* in 2017.
- School-wide performances of Fool Proof, an all student based improvisational theatre troop, which travels to schools performing relevant health and social related topics to middle and high school students such as suicide, opioid epidemic, sexual abuse, and eating disorders. Several MVHS students auditioned and make the troop each year
- Communicate monthly with the Carroll County Health Department to track absence rates over 10% to alert outbreaks.
- McDaniel College Public Safety Officers work with our Health students to demonstrate the dangers of distracted driving and driving under the influence by simulating driving with a golf cart.
- Carroll County Health Department works with our students to develop refusal skills to drugs as well as lessons on tobacco prevention.
- Partnership with the Carroll County Marriage Center to offer student lessons on healthy relationship building.
- Carroll County Rape Crisis Intervention Services to offer students lessons that help them identify sexual assault, harassment, and rape, including dating violence and what to do to get help.
- As a part of Carroll County Public Schools, members of our kitchen staff in the Partnership for a Healthier Carroll County. This program is also affiliated with the Local Health Improvement Coalition (LHIC) and State Health Improvement Process (SHIP) on a state level.

16. Does your school have a school nurse and/or a school-based health center? (X) Yes ( ) No

17. Describe your school's efforts to support student mental health and school climate (e.g. anti-bullying programs, peer counseling, etc.):

- Duane Williams, this year's School Safety/Security Director of the Year speaks at our school about our

Safe Schools Program. This was featured in a *Carroll County Times* article in 2017.

- The "Great Kindness Challenge" is a schoolwide effort to infuse a culture of kindness by promoting random acts of kindness. This was administered by the school counselors and health teachers.
- Our very active GSA (Gay Straight Alliance) Club, one of the largest active clubs at our school, offers weekly meetings during school and monthly meetings after school. In addition, informative material is presented, healthy discussions are encouraged, and celebrations are conducted each May.
- Peer Facilitator program provides peer based mediation for conflict resolution and mentorship for social issues such as bullying and stress management.
- A newly formed school-wide monthly support group to promote awareness of racial inequality for students, staff, and the community.
- Staff meeting presentation on "ACEs" Adverse Childhood Experiences though the CDC. Staff had the option of a voluntary ACEs certification program.
- Feminist Club provides a variety of free feminine hygiene products in all girl bathrooms. Flyers are periodically placed in bathrooms with health or safety information concerning issues such as pregnancy, sexually transmitted disease, and domestic violence.
- Schoolwide advisory lessons include discussions on dangers of social media and overuse of cell phones.
- The Crisis Counselor and School Counseling staff pulls small groups of freshmen advisory and Freshmen Seminar classes to discuss bullying the last two school years. Staff also raise awareness for student need, especially during the holidays or a death in the family.
- Professional Development was offered to all staff in October of 2017 to increase awareness of the signs of suicidal thoughts, depression, mental illness and the services available to students and their families.
- A Carroll County Public School system wide professional development entitled "Mental Health in the Classroom" in the spring of 2016 was made available to counselors, administrators and teachers aware of the many forms of mental illness and the signs of each. Several staff members attended.

Pillar 3: Effective Environmental and Sustainability Education

1. Which practices does your school employ to help ensure effective environmental and sustainability education? Provide specific examples of actions taken for each checked practice, highlighting innovative or unique practices and partnerships.

[X] Our school has an environmental or sustainability literacy requirement. (200 word max)
Environmental literacy requirements are pervasive across the curricula. For example, world history classes require research on the extent of non-native species and impact of the industrial revolution on habitats. Tenths grade English classes incorporate organic farming versus traditional big agriculture in argumentative writing. Physical education classes have included campus trash and recycle clean-up activities. The agriculture classes follow the national CASE (Curriculum for Agricultural Science) model, which advocates for innovation in the reduction of pesticide use. Technology classes design and test wind generated electric technologies. The newspaper and yearbook classes also include features celebrating our green activities such as Earth Day celebrations, recycling efforts. These efforts conform and exceed the 2010 mandate from Carroll County Public Schools and the 2011 Maryland State standards, the first state to require environmental literacy standards in the union. Our content supervisors and school-based administration are the first to encourage the development of cutting-edge, rigorous, and relevant sustainability lessons. For example, our administration encourages outside-based activities that utilize our campus stream, wetlands, and outdoor classrooms.

[X] Environmental and sustainability concepts are integrated throughout the curriculum. (200 word max)
From our youngest pre-school students in the Teaching Academy Program to our most rigorous Advanced Placement Calculus classes, environmental sustainability is an integral part of our school's curriculum. Beginning with our pre-school centered Child Development Classes; we wrote a grant and built a Nature Sensory Garden to promote the "No

Child Left Inside" idea. Also, in our Trigonometry classes, students calculate tree size and hillside slope erosion rates while working outside in the Outdoor Classroom. Furthermore, The AP Spanish classes research issues around climate change. We strive to integrate our LFI (Learning for Independence Classes) assist the Ag Science classes with planting and AP Biology students with assessing invasive crayfish species and help carry recycling to the outdoor recycle bin. Moreover, the Technological Issues and Impacts courses research and design technologies to reduce impact on water pollution and electrical alternative energy sources. The Wildlife Management Classes study sustainable BMP's (Best Management Practices) for landowners to promote native habitat. Finally, AP Calculus students apply integration problems with aquatic flow rates, which related to ecological issues with the Chesapeake Bay. Science Research students plant native chestnut trees and test water quality in aquaculture and hydroponic systems.

[X] Environmental and sustainability concepts are integrated into assessments. (200 word max)
The AP Language and Composition classes incorporate Thoreau's *Walden Pond* "Seeing Nature" in their essay themes. All of our Spanish I classes are assigned to design and present a "green" poster. Furthermore, our AP Human Geography courses have a research assignment on changes in sustainable agriculture in Colombia and around the Chesapeake Bay. Also, all science classes' curricula are being aligned to the new Next Generation of Science Standards for High School students. Environmental and sustainability concepts are infused throughout three core science courses. Upon completion, our students will be assessed using the MISA (Maryland Integrated Science Assessment). For example, physics and chemistry classes incorporate energy efficiency calculations and greenhouse gas as related to climate change assignments. AP Biology classes perform calculations on the impacts of humans on food chains and AP Environmental Science classes perform laboratories relating to air quality. In Technology Education classes, Agricultural Mechanical Technology classes have final projects that focus on increasing motor efficiency and alternative fuels. In addition, Script and Video Production classes have an outside assignment that can be related to an environmental or sustainability issue. Agriculture classes perform laboratories to assess soil erosion and water quality studies through Best Management Practices.

[X] Students evidence high levels of proficiency in these assessments. (100 word max)
According to the Maryland State Department of Education, MVHS's Biology High School Assessment passing rate has been >95% for the past three years. Note: the state only allows us to report >95% to protect student confidentiality. Furthermore, in 2016, our Science Research students have placed first and second in the Federation of American Aquarium Societies Publication Awards. Also, our schools' Carroll County Envirothon teams placed third in 2015 and 2016. Our Science Research and Ag Science students have written and received thousands of dollars in grant funding based on exemplar written research and speaking engagements.

[**X] Professional development in environmental and sustainability education are provided to all teachers. (200 word max)**
Our School's School Improvement Team has incorporated the renewal of the Maryland Green School recertification in the 2016-2017 school year as a major part of the schoolwide improvement plan. Since this was achieved, this year we have added achieving the National Green Ribbon to our School Improvement plan. In September 2017, all staff participated in a professional development on how to incorporate healthy, sustainable, and organic foods into daily lives and encourage students to do so as well. We have had several staff meetings at Bear Branch Nature Center and Hashawha Environmental Center's Lake Area. Schoolwide e-mails are sent out periodically to participate in MAEOE, Chesapeake Bay Foundation, and MELP (Maryland Environmental Literacy Partnership) educator events with a focus on issues related to water quality and watershed impact from counties not bordering the Chesapeake Bay. Interdepartmental and whole school staff meetings have also included ways to incorporate our outdoor spaces, such as the shaded outdoor café patio and serene wooded Outdoor Classroom.

2. For schools serving grades 9-12, provide:
Percentage of last year's eligible graduates who completed the AP Environmental Science course during their high school career: 7.1%
Percentage scoring a 3 or higher: 50% (Ten students took the test last year. Five students scored a 3 or higher.)

3. How does your school use sustainability and the environment as a context for learning science, technology, engineering and mathematics thinking skills and content knowledge? (200 word max)

MVHS is embracing the new curricular and pedagogical changes brought in by the The Next Generation of Science Standards (NGSS), which incorporates sustainability and the environment throughout the standards. For example, pollution topics are integral in chemistry courses, and understanding of air quality is pervasive in physics courses, and food chain disruptions are studied in biology based courses. AP Environmental Science, Aquatic and Terrestrial Environmental Sciences employ engineering practices for watershed management, climate change, and soil conservation in laboratories. Science Research classes also focus on engineering, specifically with issues related to Chesapeake Bay water quality. NGSS infuses engineering practices as a cross cutting concepts on a high school level for each course. Moreover, Technology Education courses, such as the Issues and Impacts courses and all Ag Science courses, incorporates engineering practices for design of environmental solutions. These follow the standards from the International Technology and Engineering Educators Association. Lastly, all science and technology classes incorporate mathematical data collection, statistical analysis, and graphing interpretation throughout the curriculum.

4. How does your school use sustainability and the environment as a context for learning green technologies and career pathways? (200 word max)

Our student in the four-year CASE program (Curriculum for Agriculture Science Education) may earn three transcripted credits from the University of Maryland, Institute of Applied Agriculture and internships are encouraged. In our Career Connections program, students have been able to participate in a plethora of green technologies and career pathways including Our school has a Career Coordinator and Mentoring Program where we provide internships to juniors and seniors who meet attendance and academic qualifications. So far, we have provided internship and mentoring co-ops with the following community organizations in the past ten years: Dr. Weaver (vet), Dr. Baker (vet), Dr. Wagner (vet), Carroll County Vet, River Valley Ranch, Hidden Brook Stables, All In Stride Equestrian Center, The Cutting Garden, Shepherds Manor Creamery, Spring Meadows Farms, Bowman's Farm Feed Store, Carroll & Baltimore County Humane Societies, Tetra Tech Water Quality Analysis, NSA, Therafit Occupational Therapy, Pivot and Drew Breakey Physical Therapy, Bear Branch & Soldier's Delight Nature Centers, and Fletcher Funeral Home. Furthermore, Terrestrial Environmental Science, AP Environmental Science, and Earth & Space Science students take tours of the geothermal facilities within MVHS to understand how our school's air and water are heated and cooled.

5. Describe students' civic/community engagement projects integrating environment and sustainability topics. (200 word max)

Our school's Key Club chapter collects thousands of plastic grocery bags and turns them into mats for the homeless in a program called Bags To Beds. Also, in the fall of 2016, our students volunteered to help construct a sensory garden for Manchester Elementary School. That same fall, our students volunteered to revamp and environmentally enhance native gardens at the same school. This came on the heels of our own collaboration with the staff at the Carroll County Outdoor School to create our own Sensory Garden in 2015. Furthermore, Science Research students work with Adam Frederick, the Assistant Director of Education at the Institute of Marine and Environmental Technology and works with the Maryland Sea Grant and The University of Maryland. These collaborations have led to student-generated grants for Ag Science and Science Research students. AP Environmental Students also take a field trip to the local wastewater treatment plant in collaboration with the Town of Manchester. For several years, a Chemistry professor and undergraduate students from McDaniel College speak to hundreds of our students about career pathways and the opportunities and hurdles of today's STEM related careers.

6. Describe students' meaningful outdoor learning experiences at every grade level. (200 word max)

We have designed our campus to be outdoor friendly. We provide several multi-functional outdoor spaces for classes to engage in meaningful outdoor learning experiences from a picturesque wooded picnic area near our stream to a café-style shaded patio area. AP Literature and Composition classes use this space for Shakespeare performances, English 10 poetry lessons, and art classes for use lessons in landscapes and still life. The stream on campus is used by many science, technology, and agriculture classes when studying water quality. In addition, all physical education classes

provide an outside experience for students, weather permitting. One Team Sports teacher used this opportunity to pick up trash and promote recycling weekly around the campus. Furthermore, for two years, our environmental science, technology education, and agriculture students have collaborated with Trout Unlimited in the "Trout in the Classroom" program, a grant-based cooperative to raise and release trout in local streams and focus on the science of water quality in stream ecosystems. Our school has a Weather Bug station on campus, used by the technology and science classes incorporate climate change studies.

7. Describe how outdoor learning is used to teach an array of subjects in context, engage the broader community, and develop civic skills. (200 word max)

Annual Trail and Stream Clean-Up Days are sponsored by the SGA and Enviro Club for Earth Week activities. This provides Student Service Learning opportunities and benefits the local community who hike the trails and recreational athletic teams and Carroll County Public School Cross Country teams for county trials. Also, our FFA chapter compete annually in speaking and performance skills at national conferences, covering topics such as soil conservation and innovative organic farming practices. In addition, in 2015, our FFA members traveled to Annapolis to discuss conservation issues to Delegates Susan Krebs and Haven Shoemaker and Senator Justin Ready as reported in the *Carroll County Times*. During the winter holiday, business classes organize a reuse clothing drive "Jeans for Teens." Finally, before the space was needed with the consolidation of North Carroll High School with Manchester Valley High School, for several years our school had a food pantry to help locals in need as reported in the *Baltimore Sun*. MVHS curricula has aided with the Boy Scouts of America's, Eagle Scout Award as reported in the *Carroll County Times* and coordinate with local companies for donations.

8. Describe your partnerships to help your school and other schools achieve in the 3 Pillars. Include both the scope and impact of these partnerships. (Maximum 200 words)

For the past three years, MVHS students have volunteered for the Hampstead Elementary School's STEM Night. Furthermore, dozens of our students volunteer each year to counsel sixth graders at the Carroll County Public School's Outdoor School. We have established several collaborative projects with North Carroll Middle School students and staff including installation native plants during the spring of 2015. Secondly, we have worked with the NCMS students transitioning into MVHS to continue a support group for minority students and their families. Manchester Valley Elementary School Sensory Garden. Through the TAM (Teaching Academy of Maryland) program, dozens of our students have interned at Shiloh Middle and North Carroll Middle Schools. We have numerous students making take advantage of the duel enrollment opportunities provided by Carroll Community College. Also, All MVHS students in may take the Accuplacer Exam to assess their college-level math skill placement through CCC. With partnerships with McDaniel College, health students work with Public Safety Officers to demonstrate the dangers of distracted driving and driving under the influence using golf cart simulators. In addition, STEM and green technologies are discusses each year with a chemistry professor and undergraduates from McDaniel College.

9. Describe any other ways that your school integrates core environment, sustainability, STEM, green technology and civics into curricula to provide effective environmental and sustainability education, highlighting on innovative or unique practices and partnerships. (Maximum 200 words)

Our school is in an ongoing partnership with the American Chestnut Association to plant and maintain a native and genetically altered blight resistant American chestnut seedlings. Safety and planting equipment was supplied by a generous grant from the National Forest Foundation in 2015. Furthermore, we received water quality assessment equipment through the Chesapeake Bay Trust and Maryland State Department of Education "Governor's Schoolshed" grant in 2013. Funding also allowed students to take a fieldtrip to compare water quality at the Hashawha Environmental Center's Big Pipe Creek and record the data in an online statewide digital data bank. Moreover, students learn civic skills through speaking engagement opportunities with an environmental and sustainability flare such as the Aquarium Society of Lancaster County, FFA National Leadership Conferences, and Carroll Biz Challenge, sponsored by the Carroll County Chamber of Commerce. Specifically, the Owings Mills based company, Tetra Tech has donated materials, provided speakers, and green technology internship opportunities for Agriculture, Technology Education, and Science Research students.