



Go Green Challenge 2018

Going Green to Keep PC Clean



School Division Policy Adoption

#1 Formally adopt a minimum of one school board policy/regulation which demonstrates the environmentally friendly commitment of the school division.

Pre 2018 Action

School Board Policy - [FECCA](#)

Energy Efficiency

#2 - Create a division wide plan to reduce energy consumption and make the plan available for public view.

Pre 2018 Action

Patrick County Environment Team

#3 - Conduct a baseline greenhouse gas emission inventory of the school division's facilities which is in compliance with the world Resources Institute Public Sector Protocol.

Not available at this time.

Energy Efficiency

#4 - Conduct an energy audit of at least two of the school division's facilities and implement recommendations that result in a 5% energy saving for each audited facility.

Pre 2018 Action - Completed in 2008 by Ameresco

Section 1: Executive Summary

Ameresco appreciates the opportunity to submit this Technical Energy Audit Report to Patrick County Public Schools (PCPS) summarizing our energy audit and recommendations for infrastructure improvements and reduced energy consumption at the school district's facilities. Our audit process involved interviewing school employees and utility providers, reviewing data supplied by PCPS visiting the individual school sites, metering specific usage where appropriate to measure specific usage, performing energy modeling and calculations and obtaining firm quoted pricing information from suppliers and vendors.

Cumulative net energy savings of \$2,698,932 achieved over the agreement term, and the annual operations/maintenance and capital avoidance savings fully funds the facility improvement measures capital value of \$3,537,210. The annual utility savings will be fully guaranteed by Ameresco to ensure PCPS meets its annual payment obligation as outlined in the project cash flow analysis. The project pro forma uses the 5.58% lowest rate for the financing of this project.

Ameresco audited the Patrick County Public School facilities, including:

- Blue Ridge Elementary School
- Hardin Reynolds Memorial School
- Meadows of Dan Elementary School
- Stuart Elementary School
- Woolwine Elementary School
- Patrick Springs Primary School
- Patrick County High School
- School Board Office
- Maintenance Shop
- New Garage
- Tech Building

The purposes of the audit included compiling and analyzing data, and comparing the energy/utility usage of the surveyed facilities with other facilities in the same facility use category and climatic region of the country. In addition, the process included making recommendations for capital, operating and maintenance (O&M) improvements that would ultimately reduce PCPS energy and O&M expenditures.

Our findings and recommendations provide for such things as:

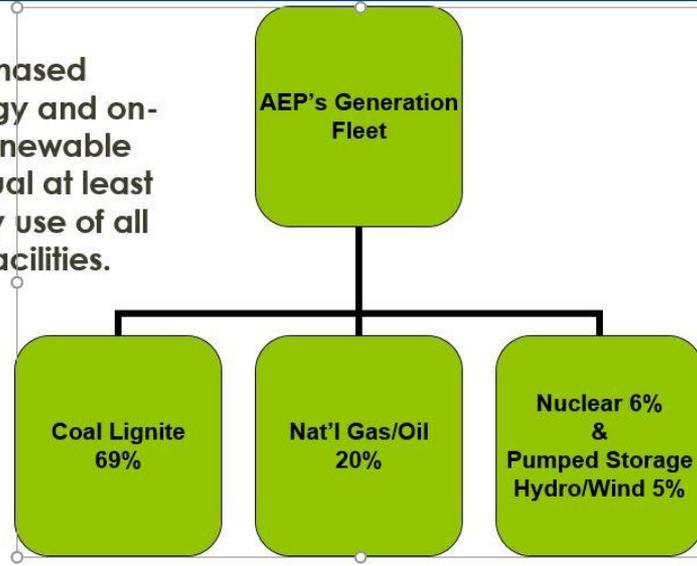
- Funding a major portion of this program with savings from the existing energy budget.
- Addressing comfort and humidity issues at various locations,

Energy Efficiency

#5 - Purchase renewable energy credits or physically install renewable energy generation capacity in school division facilities. Must equal at least 1%

Pre 2018 Action

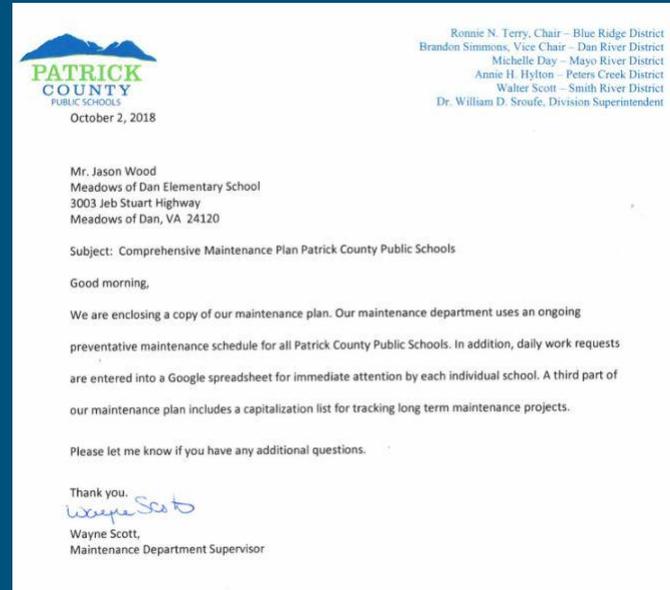
- The total of purchased renewable energy and on-site produced renewable energy must equal at least 1% of the energy use of all school division facilities.



Energy Efficiency

#6 - Develop and publish a comprehensive facility maintenance plan

Pre 2018 Action



Energy Efficiency

#7 - Establish an energy manager or energy management team for the school division. Must report yearly to school board or school division senior staff.

Pre 2018 Action

PCPS Energy Manager: Wayne Scott

PCPS Committee Members: Jason Wood, Shelia Smith, Kayla Slate, Ellen Haas, James Eaton, Brenda Martin, Jessica Kruse, Lisa Martin, Kathy Thacker, Olivia Booth, and Katie Slusher

Green Buildings

#8 - Establish a policy of utilizing best practices from a nationally recognized high performance building program.

Pre 2018 Action - [Policy FECBA](#)

Green Buildings

#9 - Build a school facility which earns certification from a nationally recognized green building rating system.

Pre 2018 Action - Meadows of Dan Elementary School - 2014



Waste Management

#10 - Quantify annual division-wide paper usage and develop a plan for 10% reduction or establish a procurement policy of a minimum of 30% post-consumer recycled content for everyday office paper use.

Pre 2018 Action



All North River products are 100% recycled with 60–100% post-consumer content. This helps Cascades preserve 47 million trees annually and contributes to the 2.8 million short tons of recycled fiber that Cascades processes each year.

Waste Management

#11 - Establish a division-wide recycling collection program.

Pre 2018 Action

Energy Manager Memo to all schools detailing all recycling programs.

All schools recycling paper, cardboard, ink cartridges, plastics, aluminum cans and “pop” tabs for Ronald McDonald House. Each year, Art Teachers include a recycled art component.

Patrick County Maintenance Department Delivers Recycling Containers to schools bi-monthly for the school and community to use.

Indoor Environmental Quality

#12 - Adopt a “Green Fleet” policy that incorporates, at a min, the purchase of low emitting fuel efficient vehicles for vehicle fleet replacement and the use of alternative fuels.

Pre 2018 Action - [Policy DN-R](#)

Indoor Environmental Quality

#13 - Adopt an anti-idling policy for school fleet vehicles

Pre 2018 Action - Transportation Policy reminder sent yearly to all drivers.

December 1 2015

Memo to all Drivers

Just a Reminder to all Patrick County School Bus Drivers. All bus should not be left Idling for more than 3 minutes during the cold season. This wastes fuel and is not recommended by the engine manufacture. It is recommended you start your bus, set the auto high idle 45 seconds and start your route a diesel engine will not warm up idling.

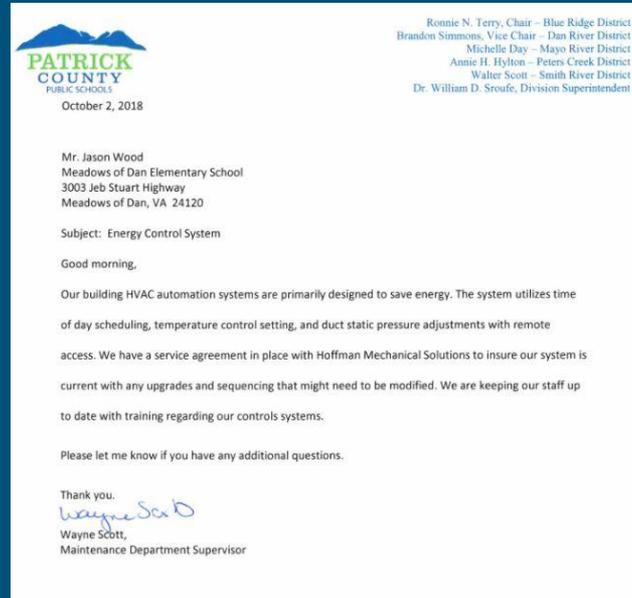
Derick Smith

Director of Transportation

Indoor Environmental Quality

#14 - Establish and implement a division-wide Indoor Air Quality Management Plan.

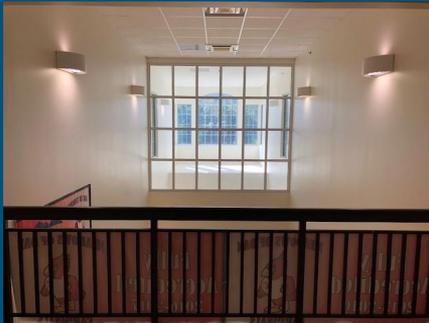
Pre 2018 Action



Indoor Environmental Quality

#15 - Conduct a division-wide day-lit classroom or an acoustical performance inventory.

Pre 2018 Action - MODE and Solar Study



TO: Customer

RE: Solar Feasibility Study – Value Proposition

Value:
A solar feasibility study provides the customer with a high-level, customized view of the potential for solar savings through a preliminary technical design of a proposed system, and detailed economic analysis identifying the benefits of solar generation in reducing the customer's electricity costs.

Components:

- 1) Site analysis:**
Secure Futures' technical team will visit the customer campus to review and identify sites with a potential for solar. Our technical team will measure potential sites, analyze access to electrical rooms, interconnection points and obtain an understanding of the customer's master plans.
- 2) Preliminary technical design:**
The result of the site visit is a preliminary technical design including basic engineering and site layout(s), approximate physical space of the array(s) and proposed equipment/panels (or equivalent).
- 3) Electricity bill analysis:**
Secure Futures will review the last 12-months of the customer's electricity bills to understand the customer's rate schedule/framework, usage history/behavior and current grid component rates (i.e. demand, fuel, riders, etc.). Understanding the customer's electricity bills provides Secure Futures an opportunity to customize a system that will meet the needs for our customers through grid electric savings.
- 4) Preliminary economic analysis:**
Secure Futures will pull together the technical design of the system, and the electric bill analysis to provide a basic economic proposal and customer value analysis, including a projected solar service fee, net benefit p/kWh of solar generation, and cost/benefit analysis.

If the result of our preliminary economic analysis does not provide our customer with a net benefit p/kWh of solar vs. grid electric rates, **we will reimburse in full the cost** of the feasibility study.

Solar Feasibility Study Cost Structure	
Tier 1L Customer (≥200,000 kWh annually)	Tier 1S Customer (≤199,999 kWh annually)
\$450	\$350

Thank you for entrusting Secure Futures, LLC to perform a customized solar feasibility study.

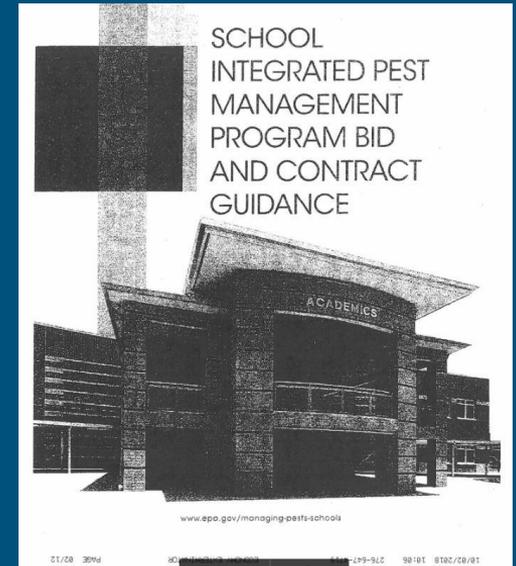

Anthony E. Smith
President/CEO

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Indoor Environmental Quality

#16 - Utilize integrated pest management procedures to prevent unacceptable levels of pests with the least possible hazard to people, property, and the environment.

Pre 2018 Action - Economy Exterminators Documentation



Employee Incentives

#17 - Provide an employee benefit for ridesharing, walking, biking, or taking transit to work.

Not available at this time

Employee Incentives

#18 - Create a division wide recognition program for teachers and staff who promote environmentally friendly concerns in their classrooms through programs and curriculum.

Pre 2018 Action - created in 2012

Action 18: Create a division wide recognition program for teachers and staff who promote "Green Education" in their classrooms through programs and curriculum.

- Division wide Recognition program for achievements for staff who promote green education through programs and curriculum (SCIENCE SOL 6.9) with rewards, etc...
- Assess the performance in our own buildings AND conduct a division wide challenge
- Minnie Moore (Compost Kids)
- Shelia Smith (Recycling Education at SES)
- Ashley Ojodeagua (Recycling Education at SES)
- Wendell Terry (Horticulture and Landscaping Classes)
- Grace Helms & Art Department (Recycled Art)
- Junior & Senior Beta Clubs

Education/Community Participation

#19 - Develop an employee education program on policies/practices relating to the environment and energy conservation.

Pre 2018 Action - 2012 action - revised yearly and presented to staff

Action 19: Develop an employee education program on policies/practices relating to the environment and energy conservation.

- **FACULTY MEETING INFORMATION UPDATES FROM GO GREEN COMMITTEE MEETINGS--GO GREEN TIPS**
- Use natural lighting or day lighting. When feasible, turn off the lights near windows.
- Close or adjust window blinds to block direct sunlight to reduce cooling needs during warm months
- Turn off your computers at the end of the workday whenever possible.
- Unplug equipment that drains energy when not in use (i.e. cell phone chargers, fans, coffeemakers, desktop printers, radios, etc.).
- Turn off Smartboards daily
- Use coffee mugs and washable glasses in cafeteria instead of disposable cups.
- http://www.gogreenva.org/?/resources/green_tips

Tips and thoughts about the implementation, goals for PCPS, and innovative actions in GOING GREEN for your staff

- ✓ reduction in energy cost as a result of installing high efficiency lighting
 - ✓ daylight sensors in classrooms to turn electric lights off when sufficient natural light enters the spaces or when room is not occupied
 - ✓ permanent temperature with timers for occupied and not occupied sensors and humidity monitoring (Turn off heat and air conditioning at night, on weekends or other times your business is closed)
 - ✓ Recycled paper products in all schools and central office (paper towels and toilet paper)
 - ✓ minimizing the amount of chemical contaminants circulating throughout the building (all of the adhesives, sealants, paints, and carpet in the school are low-emitting (low-VOC)
 - ✓ EMI recycling centers at five buildings for newspaper, office paper, magazines, cardboard, etc... Sue Washburn (food services) will continue to contact local farms for produce
 - ✓ Safe routes to school (walkers)
 - ✓ Recycling of printer cartridges, cell phones, etc. at SES (fundingfactory.com)
-
- Use natural lighting or day lighting. When feasible, turn off the lights that are near windows.
 - Close or adjust window blinds to block direct sunlight to reduce cooling needs during warm months
 - Turn off your computer and monitors at the end of the workday whenever possible. If you leave your desk for an extended time, turn off your monitor. Unplug equipment that drains energy when not in use (i.e. cell phone chargers, fans, coffeemakers, desktop printers, radios, etc.).
 - Unplug equipment not in use.
 - Evaluate your utility bills. Separate electricity and fuel bills. Target the largest energy consumer or the largest bill for energy conservation measures. Possibly implement a no lights day in your building
 - Use coffee mugs and washable glasses in cafeteria instead of disposable cups.
 - Division wide Recognition program for achievements for staff who promote green education through programs and curriculum (SCIENCE SOL 6.9) with rewards, etc...
 - Assess the performance in our own buildings
 - PTO programs about going green
 - Adopt an anti-idling policy for school vehicles
 - Student-made products that promote recycling, conservation, etc headed by the art department. Each school will make a presentation for new TV (video, radio announcement on Arbor Day or Earth Day

Education/Community Participation

#20 - Develop and implement a division wide education program for students to learn new ideas and best practices of energy conservation, environmental issues and reusable energies which will then be shared with the local community.

Pre 2018 Action - 2012 action

4 H curriculum

Patrick County 4H 2018-2019 School Year	
August Lesson – Enrollment and Election of Officers – ALL GRADES	
4th Grade Lessons Include:	
<ul style="list-style-type: none">Personal Narrative SpeechStatic Electricity – 4.3cOpen/Closed Circuits – 4.3bSeries/Parallel Circuits – 4.3aMagnetism – 4.3eNutrition/Healthy Living	<ul style="list-style-type: none">September & OctoberNovemberJanuaryFebruaryMarch
5th Grade Lessons Include:	
<ul style="list-style-type: none">Persuasive SpeechLight & Color – 5.7.a & eRock Cycle – 5.7.a & bVolcano – 5.7.a & d & eEarthquake – 5.7cNutrition/Healthy Living	<ul style="list-style-type: none">October & NovemberSeptemberJanuaryFebruaryMarch
6th Grade Lessons Include:	
<ul style="list-style-type: none">How to PresentationWaterford Lessons (3 Total) – 6.7Nutrition/Healthy Living	<ul style="list-style-type: none">September & October & NovemberJanuary & February & March
7th Grade Lessons Include:	
<ul style="list-style-type: none">Research PresentationDNA Model & Extraction – 15.12.aNutrition/Healthy Living	<ul style="list-style-type: none">September & October & NovemberJanuary & February
The 4H Marketplace	
<ul style="list-style-type: none">This is an interactive simulation (think Ready Store for younger kids) that introduces elementary students to financial decision making. They are assigned a career, receive a monthly salary (fun money), and they purchase housing, food, transportation, fun activities and other items while attempting to save a little and stay within their monthly salary.	
Smart Start with Money	
<ul style="list-style-type: none">This Extension curriculum is made to work with a Preschool/Prekindergarten class. I would provide training to your teachers and then supply them with a binder with the lessons, book suggestions and activities to go along with each one. Lessons include money awareness, spending money, sharing with others and saving.	
Lunch Buddy	
<ul style="list-style-type: none">The entire extension office would like to participate in the Lunch Buddy program this school year.	
Share the Fun	
<ul style="list-style-type: none">Patrick County 4H would like to move more involved in the school level Share the Fun Talent Show.	

Action 20: Develop and implement a division wide education program for students to learn new ideas and best practices of energy conservation, environmental issues and reusable energies which will then be shared with the local community.

- PTO programs about going green
- Student-made products that promote recycling, conservation, etc. on Earth day
- 4H agricultural awareness day and contests
- 4H PowerPoint Presentations –Subject of Conservation/Recycling
- PCHS Horticulture Dept. plant trees at the new track

Education/Community Participation

#21 - Publish an article in a local newspaper, association newsletter, professional journal or other media outlet describing some aspect of the school division's environmentally friendly activities.

Pre 2018 Action

Keep Virginia Beautiful Awards \$1,000 Grant to Patrick Springs Primary School

Richmond, Virginia (April 10, 2011) – In honor of Earth Month, Keep Virginia Beautiful (KVB) is awarding “30 Grants In 30 Days” in April, 2011. Patrick Springs Primary School has been awarded a \$1,000 grant in the Community Greening and Beautification Category. The KVB grant program focuses greater resources and attention on individual localities throughout the Commonwealth and how they are addressing the issues of litter prevention, recycling, waste reduction, beautification and education.

Patrick Springs Primary School will use the KVB grant to continue to improve and expand their Bowl of Lettuce School Garden. This garden is a hands on learning garden for Patrick Spring's mentally and physically handicapped students that work alongside their K-5 counterparts. The school, teachers, and community have really gotten behind this garden with community involvement at an all-time high. This garden was started as a way to give the students hands on experience with growing their own foods, improving their nutrition through eating organically grown foods, reducing school and home waste by composting leftovers and to include education in botany and plant life cycles.

Goals for this ongoing project are: (1) Students will continue to grow veggies of their choice, such as: tomatoes, corn lettuce, cucumbers, green beans, peas and potatoes, (2) A visit to Royal Oaks Farm in Bedford, VA, which is the largest composting facility in VA, and students will get to observe composting of: vegetables, wood, paper and animal waste, (3) A gardening workshop for parents so that families can continue gardening at home year round, and (4) finally a student/parent celebration with students serving their families " a bowl of lettuce" grown from their organic garden.

Schools

#22 - Establish a program promoting an alternative transportation to school, which encourages walking and bicycling to neighborhood schools.

Pre 2018 Action - SES encourages students to walk daily. Those who walk are allowed to enter the school first in the morning and leave school first in the afternoon.



Schools

#23 - Create an outdoor classroom in at least one school that is used for environmental education.

Pre 2018 Action -PCHS and BRES have an outdoor classroom in their courtyard.



Schools

#24 - Establish a minimum of one club or team devoted to an environmentally friendly concern in at least half of all the division's schools.

Pre 2018 Action

Ecology Class

Future Farmers of America

Dan River Basin Association



LOVE IT
don't trash it

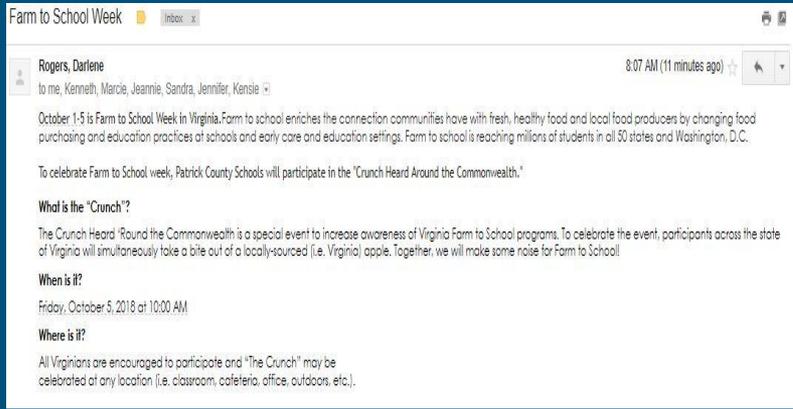
TOMORROW AT 5:30 PM
Roadside Clean Up
Blue RidgeElementary · Ararat, VA

INTERESTED



Schools

#25 - Implement a program in one or more schools that connects students to farms and/or local produce. **Pre 2018 Action (Farm to School Program, Enrichment Program, Mobile Dairy Program)**



Student Involvement

#26 - Participate in a national, regional, or local environmental program in at least half of your schools

2018 Action (Streamside Trees in the classroom and Trout in the Classroom)



Student Involvement

#27 Produce a student-made product that promotes an environmentally friendly concern and implement a way to share this with the community

2018 Action

All Elementary Schools will host a STREAM FAIR with a focus on environmental projects. Go Green Committee will host Earth Day events in the spring.

Ex. Lights out day of instruction, tree planting, etc.

Cooperation between School Div. and Local Govt.

#28 - Work with the school division's appropriating board on the "Green Government Challenge."

Not available at this time.

Cooperation between School Div. and Local Govt.

#29 - Implement a litter cleanup program in at least two schools in conjunction with local government.

2018 Action - SES and MODE - Adopt A Highway

 Volunteers Cleaning Virginia 1-800-PRIDE-VA		Virginia Department of Transportation Adopt-a-Highway Permit Application	
Those person(s) associated with the group named below intend to enhance the environment and improve the appearance of local roadsides through organized litter pickups, and request permission to "Adopt-a-Highway."			
Name of Group/Individual: <u>Meadows of Dan Elementary Jr. Beta Club</u>			
Type of Group (please circle the closest match): Family/Friends -- Individual -- Business -- <u>School Group</u> -- Community Based Group -- Faith-based Organization -- Private Club -- Government/Military -- Group Misc. -- Professional -- Fraternal Organization -- Fraternity/Sorority -- Youth Group			
Primary Contact: Name: <u>James Eaton</u> Email Address: <u>james.eaton@patrick.k12.va.us</u> Phone (home): <u>776-648-5522</u> (work): <u>776-952-2424</u> Mailing Address: <u>3003 Jeb Shaft Highway</u> City: <u>Meadows of Dan</u> State: <u>VA</u> ZIP: <u>24120</u>		Secondary Contact: Name: <u>Jana Wood</u> Email Address: <u>jana.wood@patrick.k12.va.us</u> Phone (home): <u>776-287-6342</u> (work): <u>776-952-2424</u> Mailing Address: <u>3003 Jeb Shaft Highway</u> City: <u>Meadows of Dan</u> State: <u>VA</u> ZIP: <u>24120</u>	
<small>The work will be performed under and in accordance with the Virginia Department of Transportation's Adopt-a-Highway Conditions and Safety Guidelines, both attached to this permit and incorporated herein by reference. The permit authorizing this work is issued under the VDOT Land Use Permit Manual 24 VAC 30-151-10 et seq.</small>			
<small>Applicants to whom permits are issued shall at all times indemnify and save harmless the Commonwealth Transportation Board, members of the Board, the Commonwealth, and all Commonwealth employees, agents and officers, from responsibility, damage or liability arising from the exercise of the privileges granted in such permits.</small>			
<small>This permit may be terminated by the Virginia Department of Transportation at any time the applicants do not comply with the permit or at any time the applicants' work is deemed unsafe or causes a conflict with traffic. The Department reserves the right to revise or discontinue the Adopt-a-Highway program at any time.</small>			

Extra Credit

Innovation Credits - for any efforts, policies, activities beyond those identified above which are proven to reduce the carbon emissions of the local school division.

Prior to 2018

- 1) Horticultural Building at PCHS
- 2) Paperless newsletters, progress reports, and report cards.
- 3) School Garden at MODE



Extra Credit

Innovation Credits - for any efforts, policies, activities beyond those identified above which are proven to reduce the carbon emissions of the local school division.

2018 Projects

- 1) Paper use reduction by implementing [Chromebooks](#) in all grades 5-12 (one to one initiative)
- 2) Crayola Marker Recycling <http://www.crayola.com/colorcycle.aspx>
- 3) [Recycling](#) Old Textbooks
- 4) Aquaponics program at WES
- 5) Environmental Team/Go Green Committee will plan Earth Day Events
- 6) Food Services move to biodegradable trays

Extra Credit



Crayola ColorCycle

Crayola and schools across North America are banding together to help kids understand the importance of their role in protecting the environment. That's why we launched Crayola ColorCycle. Through this initiative, students in K-12 schools across the continental United States and parts of Canada can collect and repurpose used Crayola markers.

ColorCycle is also a great opportunity for teachers and their students to explore eco-friendly practices. Specially developed standards-based lesson plans are available to enrich instruction and promote lively class discussions.

