

GOVERNMENT DIVISION
GreenRibbon



2014 School Nominee Presentation Form

PART I - ELIGIBILITY CERTIFICATION

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 one or more of grades Pre-K-12. (Schools on the same campus with one principal, even a Pre-K-12 school, must apply as an entire school.)
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 and sustainability 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.
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

ED-GRS (2012-2013)

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U.S. Department of Education Green Ribbon Schools 2013

Charter Title I Magnet Private Independent

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

Official School Name North Carroll High School
 (As it should appear on an award)

School Mailing Address 1400 Panther Drive
 (If address is P.O. Box, also include street address.)

Hampstead MD 21158
 City State Zip

County Carroll State School Code Number* 210599

Telephone (410) 751-3450 Fax (410) 751-3457

Web site/URL http://www.carrollk12.org/nch/ E-mail kndolch@carroll.k12.org

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

Kim N. Dolch Date 1-10-14
 (Principal's Signature)

Name of Superintendent* Mr. Steve Guthrie
 (Specify: Ms., Miss, Mrs., Dr., Mr., Other)

District Name* Carroll County Public Schools Tel. (410) 751-3000

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate. This is one of the highest performing green schools in my jurisdiction.

Steve Guthrie Date 1/10/14
 (Superintendent's Signature)

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

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PART II – SUMMARY OF ACHIEVEMENTS

Instructions to School Principal

Note: Part II was submitted with the application for the 2014 award process. There is no need to submit it again.

Provide a concise and coherent "snapshot" that describes how your school is representative of your jurisdiction's highest achieving green school efforts in approximately 800 words. Summarize your strengths and accomplishments. Focus on what makes your school worthy of the title U.S. Department of Education Green Ribbon School.

PART III – DOCUMENTATION OF STATE EVALUATION OF NOMINEE

Instructions to Nominating Authority

The Nominating Authority must document schools' high achievement in each of the three ED-GRS Pillars and nine Elements. For each school nominated, please attach documentation in each Pillar and Element. This may be the Authority's application based on the Framework and sample application or a committee's written evaluation of a school in each Pillar and Element.

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 one or more of grades Pre-K-12.
(Schools on the same campus with one principal, even a Pre-K-12 school, must apply as an entire school.)
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.

GreenRibbonSchools



Name of Nominating Agency Maryland State Department of Education

Name of Nominating Authority Dr. Lillian M. Lowery
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

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

Lillian M. Lowery Date 1/22/2014
(Nominating Authority's Signature)

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: February 28, 2015

Public Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email ICDocketMgr@ed.gov and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.



Maryland Green Ribbon Schools Award Nominee 1

School Contact Information

North Carroll High School
1400 Panther Drive
Hampstead, MD 21158
Web Site : <http://www.carrollk12.org/nch/>
Principal Name:Ms. Kim Dolch
Principal Email Address:kndolch@carrollk12.or
Phone Number: 410-751-3450
Lead Applicant Name:Ms. Gina Felter
Lead Applicant Email:gcfelte@carrollk12.org
Phone Number:410-751-3450

Student Data

Percent receiving Free and Reduced Meals (FARMS):11%
Percent Limited English Proficient:<1%
Student population: 780
Overall annual student attendance rate:95%
Public School 6-digit Code:210599

Demographics

Public High School (rural)
School District Name: Carroll County
Not one of the largest 50 in the nation
Total student enrollment: 26,687

Highlights Report

North Carroll High School (NCHS) was built in 1976 and was therefore not built with any modern-day green technologies. Efforts to establish a Green School culture, reduce the environmental impact of the school and to improve the health of students and staff members has required an infusion of sustainability education and an increase in the number of community partnerships.

The Green School culture is a result of activities that staff, students and community members have participated in over the past several years. As NCHS has participated in its Green School activities, the attitudes of students, teachers and other community members have changed to those of environmental stewards. This change in school culture has benefits that are seen in the hallways, cafeteria, classrooms and school grounds, and will ultimately result in a community of caring, responsible, environmental citizens. Due in large part to this change in culture, NCHS was recognized as a Maryland Green School by the Maryland Association for Environmental and Outdoor Education (MAEOE) in 2013.

The change in culture began with professional development on using the environment as a context for learning and its positive impact on student behavior, attendance and achievement. These professional development activities occurred via faculty meetings, educational field trips to Hashawha, and county-wide supervisor-led department activities. Administrators at NCHS also encourage using the environment as a context for learning. They all participated in the Maryland Principals Environmental Leadership Program sponsored by the Chesapeake Bay Foundation. They returned from their field and classroom experience with first-hand information about the ecological and economic impact of human activities on the health of the Bay.

As a result of focused professional development, all teachers at NCHS began to infuse their curriculum with real-life environmental examples. For example, in art classes, students make scratch boards inspired by nature. The English department examines hydraulic fracturing as a preparation for an AP language exam essay question. In many classes the environmental issue investigation model is being used to examine issues such as wildlife population ecology, the health of the Chesapeake Bay, stream ecology and schoolyard habitat improvement. Small celebrations have been held with specific groups of students who have worked to improve the best management practices both in and around the school and to teach community members about current environmental research being conducted in our science research classes.

Students on the NCHS Green Team lead efforts to reduce environmental impact and costs both inside and outside the school building. They encourage water conservation by all students and staff members. Many faucets and water fountains throughout the building are designed to automatically shut-off, but on those that don't, Green Team posted signs to encourage water

conservation. The NCHS Green Team encourages energy conservation as well through “Turn it off Tuesdays.” When students and staff turn lights off, they get an “energy star.” In terms of solid waste reduction, all classrooms and offices throughout the school have paper recycling bins, the hallways and cafeteria have can and bottle recycling bins, and the cafeteria has vermi-composting bins with over 2000 Red Wigglers. Students place any fruit and vegetable scraps into clearly labeled green buckets in the cafeteria each day. The Green Team students then place these scraps into the vermin-compost bins, monitor and care for the health of the worms, and harvest compost that is utilized in native plantings on school grounds. This form of solid waste reduction has been a tremendous learning experience for the students and staff at NCHS. Other efforts to reduce, reuse, and recycle are made through the “Green Fact Friday” announcements and informational posters throughout the school.

Outside the school, students, faculty, and community members conducted a site analysis and, as a result of their study, have designed and constructed a bluebird trail, running waterfall, no-mow zone, songbird habitat and an American Chestnut orchard. These areas are used to educate other students—including those in a neighboring elementary school—about the need for native habitat restoration, the importance of biodiversity, and the connection between native plants and animal life cycles. The Chestnut orchard was planted and maintained through a collaborative research effort to restore the American Chestnut. Partners include Carroll County Public Schools, the American Chestnut Foundation and Thorpewood, a non-profit environmental education organization.

Plantings at NCHS utilize a variety of native plant species. All of these plants have been selected using the *Native Plants for Wildlife Habitat and Conservation Landscaping: Chesapeake Bay Watershed* publication by the U.S. Fish & Wildlife Service. Some plant species include: Virginia sweetspire, Eastern redbud, winterberry holly, beardtongue and wild columbine. Plant species were selected based upon the location they were to be planted and their nutrient, sun and moisture requirements. Many of these species are being raised by NCHS students in the school greenhouse or obtained in collaboration with a local nursery.

Efforts have also been made to improve the health and wellness of the students and staff members. In many courses, health concepts are taught. For example, the Learning for Independence (LFI) class has focused on the food pyramid and created posters in the cafeteria to educate all students about healthy eating habits. The Intro to Foods and Health classes are also educating the rest of the school through informational signs and morning announcements. NCHS initiated the “Walk for Wellness” at all lunch shifts this school year during which each student is encouraged to walk after eating their meal. Teachers and other staff members also get involved in this healthy program. During their walk they pass a showcase that has been decorated with a large iPhone illustrating the apps that are designed to help improve wellness.

Finally, North Carroll's connection to the community includes a connection between the NCHS staff and the Carroll County Outdoor School teachers to enhance instruction. Many experts in the field of environmental science share information with our students during STEM Career Day as well as during other guest speaking appearances. Funding has been obtained from many local environmental agencies, including donations from the Center of Marine Biotechnology in Baltimore to begin the science research program in aquaculture. NCHS Green Team leaders go to the local elementary schools to teach third grade students about the 4 "R"s and composting. Students at Hampstead Elementary plan on participating in positive environmental stewardship in their school through a composting program like the one we have here at NCHS. Community partnerships are key to the success of environmental instruction at NCHS and will continue to strengthen in coming years through our program of Green School education.

Narrative

North Carroll High School is located in rural Carroll County, Maryland. Originally, the school grounds consisted of mowed grass, a few non-native trees and asphalt. Students in a variety of classes over the past ten years have worked with their teachers to increase the number of native trees and plants on the school grounds. As students in the ecology, horticulture, landscaping, wildlife management and other courses learned about native wildlife species and their dependence on indigenous plants, the number of native plantings has increased. This process began with a native garden in front of the main office door called "Autumn's Garden." This native habitat was created in memory of a departed NCHS student and it began the tradition of remembering our lost classmates through gardens around the school.

A shift in culture has occurred due to the Green School activities that staff, students, and community members have taken part in over the past few years. There has been an increase in the interest shown by many teachers and students as new projects are integrated into the school and many outside projects are supported by local community members. As NCHS has participated in its Green School activities, the attitudes of students, teachers and other community members have changed to those of environmental stewards. This change in school culture has benefits that are seen in the hallways, cafeteria, classrooms and school grounds, and will ultimately result in a community of caring, responsible and informed citizens.

The change in culture began with professional development on using the environment as a context for learning and its positive impact on student behavior, attendance and achievement. These professional development activities occurred via faculty meetings, educational field trips to Hashawha Outdoor School, and county-wide supervisor-led department activities. Teachers from our science department have been involved in learning real-world science applications through professional development provided by our county

science supervisor. Teachers participating developed standards-based instructional strategies in the fields of aquaculture, Bay grass restoration, microbiology and biodiversity, American chestnut research, hydroponics and aquaponics.

These topics have been utilized throughout instruction in many of our curricular areas at NCHS. English teachers use “fracking” and its potential effects on the environment and economy in Maryland to create relevance in the literature students are studying. The Ag/Tech teachers have also been participated in professional development to implement the Curriculum for Agricultural Science Education (CASE). These teachers are well-prepared to utilize environmental issues as a context for engaging students in authentic learning experiences.

Student instructional activities are infused with real-life environmental examples. In art classes, students make scratch boards inspired by nature. The English department examines hydraulic fracturing as a preparation for an AP language exam essay question. In many classes the environmental issue investigation model is being used to examine issues such as wildlife population ecology, the health of the Chesapeake Bay, stream ecology and schoolyard habitat improvement. Small celebrations have been held with specific groups of students who have worked to improve the best management practices both in and around the school and to teach community members about current environmental research being conducted in our science research classes.

In Animal and Plant Biotechnology, students perform genetic engineering by transforming *E. coli* HB101 with the pGlo gene. Furthermore, students investigate and report on *Agrobacterium tumefaciens*, the crown gall disease-causing bacteria that is frequently used to genetically manipulate many plants in agriculture. Both activities simulate the genetic engineering done to make plants disease and pest resistant, to decrease their need for chemicals, and to make them more productive in less than hospitable conditions. Students also investigate alternative fuel production by synthesizing ethanol from a variety of plants/sources. Also, students conduct a bioremediation lab, where they use oil-eating bacteria to clean up a simulated oil spill. Utilizing simulation software, they choose what type of conditions to which the bacteria will be subjected, conduct the investigation and analyze the results.

In the course, Introduction to Agriculture, Food and Natural Resources, students investigate water quality by using LabQuests and five sensors to determine the health of a body of water. In this investigation, they measure water temperature, dissolved oxygen, pH, turbidity and total dissolved solids and cross-reference their data with USGS water standards for streams and ponds to determine if our stream and pond are healthy. These investigations are linked directly to curricular topics such as habitats, food webs, energy and nutrient transfer via energy pyramids.

School administrators have also embraced utilizing the environment as a context for teaching and learning. The administrative team from NCHS attended the Maryland Principals Environmental Leadership Program through the Chesapeake Bay Foundation. The three administrators spent three days and two nights on Port Isobel, an island in the middle of the Chesapeake Bay. During this trip, the educators were immersed in learning about the current health of the Bay in a variety of hands-on, outdoor activities. The educators learned about the history and culture of a Bay waterman's community by using traditional methods for setting crab pots, scraping grass beds and dredging for oysters. They shared their experiences with teachers during professional development throughout the school year. One of the NCHS assistant principals produced "A Trip to Tangier" photo story that he used as an engagement to begin the back to school "Go Green" activities. During this presentation, he shared how his upbringing in New Jersey did not afford him with very much positive information about the environment and how this trip to Tangier Island in the middle of the Chesapeake Bay taught him the importance of environmental education and positive action in our community.

The school administration encourages efforts to reduce environmental impacts and costs both inside and outside the school building including water conservation by all students and staff members. Many faucets throughout the building are designed to automatically shut-off and signs have been posted near the others to encourage conservation. The NCHS Green Team encourages energy conservation through "Turn it off Tuesdays." When students and staff turn lights off, they get an "energy star."

NCHS students have implemented procedures to reduce solid waste. Students throughout the school in various classes learn the issues associated with landfill overcrowding and the negative environmental impacts of an overabundance of solid waste. The NCHS Green Team plays an integral role in the school-wide paper recycling project. Following education about the need for reducing our solid waste, these students took on the task of placing recycling boxes in every classroom and office throughout the school. They then began to educate the students about the four R's—reduce, reuse, rot—and faculty through the morning announcements and their "Green Fact Fridays." The teachers of the LFI class requested that the life skills students use this project as an educational experience as part of their jobs skills unit. Each day, these students learn vital life skills as they collect and recycle the unwanted paper from throughout the school building. This paper is placed into the Paper Retriever dumpsters in the student parking lot and picked-up by a recycling firm. The funds received from the firm are then donated back to the school. Over the past few years, the amount of funds received has increased from \$27 to \$77 per quarter; a tremendous accomplishment for NCHS students. Through these efforts, NSHS recycles approximately 50% of materials that would otherwise enter the waste stream.

Can and bottle recycling programs have increased as well at NCHS. The NCHS Green Team has worked diligently to ensure that each classroom and office have a can and bottle recycling container. The NHS has purchased eight green recycling containers that are placed throughout the halls of the school to increase recycling as well. Large trash cans have been transformed by the NHS and Green Team students into can and bottle recycling containers for the cafeteria and outside by the athletic venues for students, staff and community members to utilize. Overall, the can and bottle recycling programs have increased both in the classroom and in the community.

One final way in which NCHS has been reducing its solid waste is through composting. Green Team students created vermi-compost bins with over 2000 red wigglers, newspaper and fruit and veggie scraps. These students educated the faculty and students about why composting is important through announcements, signs and short lessons during lunch. Students were encouraged to place any fruit and vegetable scraps into clearly labeled green buckets in the cafeteria each day. The Green Team students then place these scraps into the vermin-compost bins; monitor and care for the progress of the worms, and in the process have created wonderful compost that is utilized to fertilize native plantings around the school. This form of solid waste reduction has been a tremendous learning experience for the students and staff at NCHS.

NCHS has not had hazardous materials, including mercury, on site since 2000. All flammable liquids are properly stored and monitored by maintenance staff, and when required, are disposed of by a licensed contractor. To reduce exposure to hazardous cleaning materials, maintenance staff use green cleaners approximately 75% of the time. Routine inspections occur at least once per month by a certified pest management service. Records are kept at school regarding the treatment of any pests in and/or around the school building. Most of the pest management is conducted by utilizing glue boards and traps so that harmful chemicals are not in areas where students are located. Additional practices to reduce exposure to hazardous substances are also in place including prohibiting smoking on campus, regular testing for radon, and the removal of structures containing CCA. To prevent exposure to asthma triggers, air filters in the mechanical room are changed at a minimum of every three months. Record keeping includes the completion of a check-off sheet to ensure this is done. All flowering plants must be a certain distance from all intake vents and windows per the CCPS code for school grounds. The building's ventilation system is inspected once a month and the filters are changed whenever needed, but at a minimum of every three months. A pre-maintenance sheet is kept which indicates when filters are changed. The school facility is under constant monitoring by all school faculty and maintenance staff. Leaks are patched as soon as possible, with the ceiling tiles removed so that the growth of mold can be prevented. Once dry, the ceiling tiles are re-hung. There are very few, if any leaks in our building and there are no issues

with condensation or excess humidity. All classrooms and offices are adequately ventilated with outside air through the school's fan system. Plant operations staff members inspect the system at least once per month, and if there are any issues, particularly those identified by school staff, address them promptly. The ventilation of the building is consistent with both state and local codes for air quality. To reduce exposure to vehicle emissions, all buses are unloaded at least 25 feet from the school building. Even though most students ride busses, students are encouraged to walk to school through the Safe Routes to School program.

Carroll County Public Schools took a comprehensive look at bell schedules so that school times could be adjusted to increase the efficiency of transportation. By becoming more efficient the number of buses in the system was reduced by 40. Negative environmental impacts have decreased because of a reduction in diesel emissions, a reduction in oil consumption, and less tire tread on our roadways. The CCPS Transportation department consistently evaluates bus runs to minimize deadhead miles, the mileage the buses travel without students on board, which results in a reduction of fuel use and emissions. CCPS has also worked to limit the life of a bus to 12 years so each year we retire the less fuel efficient buses and put new buses into use, thereby reducing emissions and saving energy.

Healthy nutrition is promoted at NCHS in a variety of ways. In the cafeteria, we offer a variety of fresh fruits and vegetables. Students can have as many fruits and vegetables as they want with their daily lunches. We purchase locally-grown apples from Baugher's Orchard, and when in season we get other fresh fruits and vegetables from other local produce providers such as Deep Run and Wike's Family Farm. We offer a full complement of colors of fruits and vegetables so that a student eating at school every day would have the proper nutrition for that week. We participate in the Farms to Schools initiative in the fall and post information to educate students about the program.

Carroll County Public Schools operate the USDA National School Lunch and School Breakfast Programs that meet or exceed all nutritional standards within these programs as demonstrated by MSDE annual reviews. In school year 2013, the system underwent the certification process to verify that the program was providing meals that met the Healthy Hunger Free Kids Act standards and became eligible for an additional \$.06 funding. Within the Wellness Policy, the school system elects stricter local requirements for the sale of competitive foods than those required by these federal programs.

NCHS also promotes healthy nutrition through both its Health and Introduction to Foods classes. In the health classes, students demonstrate the ability to use nutrition and fitness knowledge, skills, and strategies to promote a healthy lifestyle. They analyze food labels and nutritional guides to make healthy decisions, investigate the influences on nutrition, personal eating, and activity behaviors and analyze the importance for nutrients needed in the body.

Students also identify their own personal eating habits that need improvement, assess their personal fitness and identify areas of personal physical activity behaviors to determine a plan of action to address areas targeted for nutritional information and food groups. In health classes, students explain body image, how it is developed and how it is influenced by examining eating disorders and the impact of the media upon a young adult's body image. In the Introduction to Foods classes, healthy nutrition is focused upon in all the menu items taught. Healthy alternatives to common ingredients are described and proper healthy choices are encouraged.

NCHS has a PB & J day annually where we focus on proper nutrition. There are lessons on the healthy aspects of eating wheat bread versus white bread and the other components of a peanut butter and jelly sandwich. The school nurse and administration make sandwiches for all the students that they can enjoy during lunch. This past year, the registered dietician from Martin's food store came for a school-wide assembly and educated students and staff on healthy eating options. As part of a coordinated health initiative, NCHS partners with the Carroll County Health Department to provide maternal education to expecting mothers and hearing and vision screening for all students and staff demonstrating deficiencies in either area. NCHS has a health suite with a registered nurse on staff every day of the school year. Any minor health matters are addressed by the nurse, any emergencies are directed toward 911 emergency personnel. Carroll County Public Schools addresses harassment and bullying in various ways. The mandatory county-wide advisory program includes anti-bullying and harassment lessons. Classroom teachers become "advisors" to a group of students for their four years of high school and work with these students to support them in their coursework. The school counseling department works closely with the administration to promote a positive school climate at NCHS. Student peer facilitators complete a standard training program and work with students to identify any harassment that may be taking place among students. We have a full-time Crisis Counselor that conducts mediations between students when needed and alerts administration if disciplinary action is required. Bullying and harassment are not tolerated at NCHS and both are addressed quickly and fairly. The student body also has created the Stand Up Club which works to provide education to all staff and students about the effects of bullying and harassment. They conduct a variety of activities throughout the school year to raise awareness about these very serious issues. The student members of this club also promote a school climate of tolerance and acceptance through different positive initiatives.

Outdoor exercise opportunities are included in all of the Physical Education courses when the weather permits. Nature-based experiences have increased in that all teachers are asked to take their classes outside for any activities that are appropriate. Some courses also include an outdoor component. Ecology, biology and Agriscience classes use the surrounding school grounds throughout instruction. An outdoor classroom near a wooded area was created using funds from a donation by the Class of 2013. We have also begun the NC Panthers Walk for

Wellness initiative in which all students may walk following their lunch. This walk includes a portion outside the school when weather permits.

Outside the school, students, faculty, and community members have designed and constructed a bluebird trail, running waterfall, no-mow zone, songbird habitat and chestnut orchard. The NCHS science department has worked diligently with students over the past eight years to design, plant and maintain an American chestnut orchard that includes not only American Chestnut trees, but other native tree species as well. This orchard is utilized by students to learn about many topics in not only science courses, but also in horticulture, wildlife management and landscaping. The trees in the orchard are also a community connection, in that the American Chestnut Foundation works with the students and teachers to ensure the longevity of the trees and monitor the growth of the blight fungus on them. In coming semesters, science research students will utilize the trees in the NCHS orchard to further their research skills and join in on the nationwide study to bring back this important keystone species. All the habitats on school grounds are used to educate students throughout the high school and community about the need for native habitat restoration and biodiversity. Elementary school students visit to learn about animal life cycles as well. The plants and other materials for the projects were obtained from local sources and with funding secured by students and teachers.

Students on the NCHS Green Team learned about bluebird population dynamics through a special presentation. Team members also learned about community interactions such as competition for resources and non-native species and their impact on the eastern bluebird population in Carroll County. During the Schoolyard Habitat Assessment, students collected data that indicated that there were no nesting sites available for the eastern bluebird on the NCHS campus. Students built and mounted 3 bluebird boxes throughout the school grounds in areas where eastern bluebirds could feed and raise young. Every week, the NCHS Green Team monitors and maintains this bluebird trail and uses the data that they collect from it to predict the current state of the eastern bluebird population in our community. Students also learn the importance of the bluebird trail for other native bird species and the community interactions between them and the bluebird population. Through an Eagle Scout Project, a student acquired the necessary funding to construct an additional 11 bluebird boxes and mounted them on poles in proper locations throughout the school grounds. He has also created signs to be placed inside and outside the school building to educate visitors about this important native species. In the spring, teachers will analyze the data collected from these boxes in a variety of lessons that utilize the environment as a context for learning.

Efforts have also been made to improve the health and wellness of the students and staff members. Health concepts are taught in many courses. For example, the Learning for

Independence (LFI) class created posters to display in the cafeteria to educate all students on the updated food pyramid. The Introduction to Foods and Health classes are also educating the rest of the school through informational signs and morning announcements. We have begun the “Walk for Wellness” at all lunch shifts this school year in which each student is encouraged to walk after eating their meal. Teachers and other staff members also get involved in this healthy alternative. On their walk they pass a showcase that has been decorated with a large iPhone image depicting apps that are designed to help improve wellness.

North Carroll’s connection to the community includes collaboration among the staff, the Carroll County Outdoor School teachers, and Carroll County Parks and Recreation staff to provide more opportunities for outdoor instruction. Many experts in the field of environmental science share vital information with our students during STEM Career Day and during other guest speaking appearances. Funding has been attained from many local environmental grant agencies, including donations from the Center of Marine Biotechnology to begin the science research program. NCHS Green Team leaders go to the local elementary schools to teach third grade students about the 4 “R”s and composting. Students at Hampstead Elementary have created environmental projects and plan on participating in positive environmental stewardship in their school through a composting program like the one we have here at NCHS. Community partnerships are key to the success of environmental instruction at NCHS and will continue to strengthen in coming years of Green School education.

NCHS has environmental best management practices when it comes to water conservation. In the design of the school, low flow toilets and automatic shut-off faucets were integrated in all of the lavatories. The NCHS maintenance staff works diligently to repair and prevent all leaks throughout the school and they provide gentle reminders of how water use affects the functioning of the school building. The chemicals used to clean the school, including the soap in all of the dispensers, are also chosen to reduce the pollution of our watershed and health of our students and community. Any unapproved soaps, lotions or chemicals are strictly prohibited and all materials needed for science and other classes must be reviewed for its safety.

The NCHS staff has worked to instruct students on the importance of water conservation. The English department has integrated multiple activities in which students explore the process of hydrofracking, a very real and detrimental occurrence in our local watershed. The NCHS Green Team has also worked to educate the students, staff and visitors throughout the school by posting signs by all water fountains and faucets that do not automatically shut off to remind everyone to conserve this precious resource. The members of the club have also utilized the morning announcements to educate students about the necessity of water conservation through the “Green Fact Fridays” campaign. These

announcements explain the importance of watershed health and its connection to the health of students and staff at the school.

Other ways in which NCHS practices water conservation is through its watershed instruction and habitat restoration projects. All NCHS science teachers practice water conservation in the lab activities that are conducted. Safety concerns regarding chemical disposal are also explained to students with specific attention paid to the path water takes once it leaves the classroom sink. In the school's American Chestnut Restoration Orchard for example, students pull weeds by hand, utilize cardboard and mulch as a weed barrier around the growing trees. A no-mow zone created this year reduces the school's negative impact on our watershed by removing excess nutrients and toxins from the water in our community. This also reduces the use of fossil fuels by mowers which results in a decrease in the amount of acid rain produced in our area. Native plants that are chosen for habitat restoration projects reduce the need for watering when they are put into the ground and all students and staff members work diligently to minimize any water use throughout the school grounds.

The operation of a school building results in tremendous amounts of energy consumption. Prior to this school year, Carroll County Superintendents have requested that schools conserve energy to reduce utility cost in our county. NCHS, over the past few school years, has put into place energy conservation practices to accomplish this goal. The first of these practices was the conversion of all computers to energy conservation settings. Many lights that used to be on overnight for safety reasons have been turned off to reduce electricity use. The Environmental Conservation Class began the energy conservation efforts by asking staff members to sign a pledge to turn off the lights when not needed. They placed "Turn off the Lights" decals on the light switches throughout the school and then provided reminders to teachers who forgot. This was an outstanding start to the NCHS energy conservation campaign.

During the following school year, the NCHS Green Team created signs in multiple languages to post near all light switches to encourage students and staff to turn off the lights. The "Turn it off Tuesdays" campaign was begun by the NCHS Green Team with the help and support of the entire staff and student body. Every Tuesday, the entire school is encouraged to turn off as many lights as possible. In many classrooms, natural light from windows is utilized and all overhead lights are eliminated. In others where natural light is not available, one set of lights is turned-off to reduce electricity use. The offices, cafeteria and gymnasium are also involved in only using the lights that are necessary. The administration helped to kick off this campaign with the purchase of "NCHS Go Green" tee shirts for staff members. Each Tuesday green is worn by many students and faculty to remind the entire school community of our efforts. The

NCHS Green Team places “Energy Stars” next to the room signs to reward those classrooms and offices who are doing their part to conserve electricity on these days.

The NC Green Team has played an integral role in the education of why we should conserve electricity through the “Green Fact Fridays” posted during the morning announcements. These simple facts encourage and remind NCHS staff and students to reduce energy use whenever possible. One final note on the energy conservation campaign here at NCHS is in regards to the amazing change we have observed on all days of the school year. It is evident that all staff and students have begun to change their behavior not only on Turn it off Tuesdays, but on all days when it comes to turning off the lights when possible.

Based upon conversations with students and parents during many of our events, we are encouraged that the positive initiatives we have established at NCHS in promoting a green culture and environmental stewardship have carried-over into the community as well.