

2014-2015 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.
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 2014-2015

Charter Title I Magnet Private Independent Public

Name of Principal: Dr. Paula Girouard McCann

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

Official School Name: Hingham High School

(As it should appear on an award)

Official School Name Mailing Address: 17 Union Street, Hingham, Massachusetts 02043

(If address is P.O. Box, also include street address.)

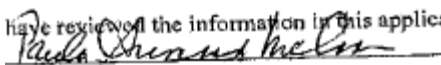
County: State School Code Number *: 01310505

Telephone: 781-741-1560 x1002 Fax:

Web site/URL: <http://hinghamschools.com/hingham-high-school/> E-mail: pgmccann@hinghamschools.org

*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.

have reviewed the information in this applic:


Date: 1-30-2015

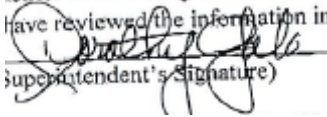
(Principal's Signature)

Name of Superintendent: Dr. Dorothy H. Galo

(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in official records)

District Name: Hingham Public Schools

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

have reviewed the information in

(Superintendent's Signature)

Date: 1-30-2015

(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: Massachusetts Department of Elementary and Secondary Education

Name of Nominating Authority: Mitchell D. Chester, Ed.D., Commissioner of Elementary and Secondary Education
(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.



Date: 1-30-2015

(Nominating Authority's Signature)

SUMMARY AND DOCUMENTATION OF NOMINEE'S ACHIEVEMENTS

Provide a coherent "snapshot" 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 and nine Elements. Then, include documentation and concrete examples for work in every Pillar and Element.

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: 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.

Massachusetts Green Ribbon Schools Application (2014-2015)

Hingham High School's Green Committee laid the ground work for a blossoming school community effort to reduce consumption, expand green projects, and engage the larger community. Starting with a week-long kick-off event - Green Week, Hingham high school students participate in many events to reduce energy and waste, and raise awareness. Events have included sports teams supervising and promoting a cafeteria-wide "slash the trash" competition; random acts of green-ness awards; guest speakers, such as Boston Bruin and environmentalist Andrew Ference; and teacher-focused lessons on environmental topics.

Hingham High School (HHS) has not only engaged with its local community, but also takes part in state and national efforts that combine education with civic engagement, such as: fisheries habitat restoration, the Journey North Campaign, Green Apple Day of Service, Teach-in on America Recycles Day, Green Week, and drives to collect and reuse clothing, shoes and sports-equipment. Hingham has received numerous accolades for its work, including the Massachusetts Legislature's Green Difference Award, state Department of Environmental Protection awards, environmental stewardship awards, and a global education honoree award.

HHS continues to upgrade facilities in alignment with its environmental goals. HHS installed (with financial support from both Aquarion Water Company and the local parent teacher organization) three hydration stations that provide cold, filtered tap water. The stations have proven enormously popular with students and staff alike. HHS also sends 50-90 pounds of compostable food scraps directly to compost containers every day after lunch. The volume of compost rises every year with the addition of compostable lunch trays. Students later sell some of the compost at a local farmers' market, thus gaining a powerful lesson in both science and civic action. Students raised funds and rolled up their sleeves to transform a courtyard into a green space with garden beds and a green house. Hingham administrators have also made strides in reducing greenhouse gas emissions, natural gas, non-transportation, energy, and water usage. A high school student was directly involved with many of the retrofit projects after a senior capstone project analyzing how energy efficiency budget allocations could yield the greatest impact.

Students have access to the Weir River Watershed, Foundry Pond, and Wompatuck State Park, which serve as outdoor learning labs for environmental science classes and the mountain biking program. Hingham also supports students' well-being in a number of ways: a school-wide Climate Committee, guest speakers; strong anti-bullying policies, a peer facilitator program to train student leaders, peer mediators and peacekeepers.

Hingham incorporates environmental topics, issues, and solutions across academic subjects. The science department integrates environmental and sustainability concepts throughout its curriculum, including capstone projects focused on 21st century issues. Electronics, auto shop and wood shop classes explore renewable energy sources, green technology, self-reliance and sustainable forestry. All history classes examine the role of climate, disease, population, urbanization and the impact of humans on the environment. Economic and mathematics students address market and government efforts to reduce negative environmental externalities within problem sets.

Hingham continues to pioneer new initiatives to further its ambitious goals.

Hingham High School (Hingham, Massachusetts)		
<u>ED-GRS Pillars and Elements</u>	<u>Max. Points</u>	<u>Points Received</u>
Pillar I: Reduce environmental impact and costs: 30%		
Element 1A: Reduced or eliminated greenhouse gas (GHG) emissions Energy Buildings Transportation	10 points	6
Element 1B: Improved water quality, efficiency, and conservation Water Grounds	10 points	8
Element 1C: Reduced waste production Waste Hazardous waste	10 points	10
Total Pillar I		24
Pillar II: Improve the health and wellness of students and staff: 30%		
Element 2A: Integrated school environmental health program Integrated Pest Management Contaminant controls and Ventilation Asthma control Indoor air quality Moisture control Chemical management	15 points	10.5
Element 2B: Nutrition and fitness Fitness and outdoor time Food and Nutrition Other coordinated school health programming	15 points	15
Total Pillar II		25.5
Pillar III: Provide effective environmental and sustainability education, incorporating STEM, civic skills and green career pathways: 40%		
Element 3A: Interdisciplinary learning about the key relationships between dynamic environmental, energy and human systems	20 points	17
Element 3B: Use of the environment and sustainability to develop STEM content, knowledge, and thinking skills	10 points	7
Element 3C: Development and application of civic knowledge and skills	10 points	7
Total Pillar III		31
Total	100 points	80.5

1. Is your school participating in a local, state or national school program, such as EPA ENERGY STAR Portfolio Manager, MA-CHPS, EcoSchools, Project Learning Tree, or others, which asks you to benchmark progress in some fashion in any or all of the Pillars?

Yes No Program(s) and level(s) achieved: N/A. But please note: The HHS Assistant Principal and Green Team advisor recently completed an EPA webinar (“Sensible Steps for Energy Efficiency”) on the use of EPA Energy Star Portfolio Manager. HHS hopes to begin implementation of this program in FY16.

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

Yes No Award(s) and year(s) (1) HHS was selected from an international pool as the “Featured School” of the month on the Green Schools Alliance website (April 2014); (2) HHS won the top statewide honor in the "High School" category at MassRecycle’s 18th annual recycling awards program in Worcester, MA (November 2013); (3) Hingham Public Schools was awarded a combined total of \$15,500 in MA Sustainable Materials Recovery money to purchase school recycling equipment and implementation assistance (November 2013); (4) One HHS student (Green Team vice president Lea Concannon, HHS Class of 2016) was recently selected (November 2014) to serve as an Alliance for Climate Education Fellow during the 2014-2015 school year; (5) One HHS student (Green Team president, Gianluca Nigro ‘15) was selected to serve as a U.S. Green School Fellow at the Student Climate and Conservation Congress (Sc3), sponsored by the Green Schools Alliance and held at the U.S. Fish and Wildlife Service’s National Conservation Center in West Virginia (June 2014); (6) Janice McPhillips, a parent representative on the HHS Green Team, was honored by Green Schools for “Outstanding Commitment to Environmental Education” at a MA State House ceremony in May 2014; (7) HHS students from both the Student Council Green Committee and Environmental Science classes were recognized at the Weir River Watershed Association's annual meeting (December 2013) for their contributions to the MA DEP’s River Instream Flow Stewards (RIFLS) program; students participated in both USGS stream gage monitoring and smelt fisheries habitat restoration; (8) two HHS students (Gray Kinsella ‘14 and Dan Tracy ‘14) were nominated to participate in (and subsequently completed) a two-week sustainability program at UMass/Amherst (July-August 2013); (9) one HHS student (Gray Kinsella ‘14) received a scholarship from the Alliance for Climate Education (ACE) to attend a national conference on climate change in Pittsburgh in October 2013; (10) a science teacher and HHS Green Team member (Dan Clune) won a grant from the Hingham Education Foundation (June 2013) to gain access to the Heliotronics Solar Learning Lab (Teaching STEM Subjects with Renewable Energy Data); (11) HHS was awarded a \$20,000 grant from National Geographic and Sun Chips for being one of 20 winners nationwide in their “Green Effect” program (2009); after raising an additional \$60,000, HHS recently completed construction of the greenhouse (June 2014) in an interior school courtyard; (12) HHS was commended by the MA Department of Environmental Protection’s “Green Team” program in 2012 and 2014, and was named a “Grand Prize Winner” in 2013; (13) Assistant Principal Richard Swanson was recognized as a statewide "Green Leader" at a MA State House ceremony in April 2013; (14) Mr. Swanson was also named a 2012 “Global Education Honoree” by Primary Source (a professional development organization for educators) primarily for promoting environmental initiatives and best practices at workshops and seminars; (15) HHS won the “Double Play Campaign” (a drive to collect gently used sports equipment co-sponsored by Jordan’s Furniture and the Red Sox Foundation) three years in a row, surpassing the efforts of other schools across New England in 2011, 2012 and 2013; (16) HHS has twice won the “Golden Sneaker” trophy by collecting more than 2600 pairs of used shoes (and thereby outpacing two rival high schools) in three separate sneaker drives organized by the HHS Green Team (and connected with several recycling programs, including Nike’s “Reuse-A-Shoe” program) in 2011, 2013 and 2014; (17) the HHS Green Team was a finalist for the 2014 Massachusetts Interscholastic Athletic Association (MIAA) Community Service Award; and (18) HHS won a “2014 Eco Award” from *South Shore Living* magazine.

3. Does your school participate in any Massachusetts environmental, health, or STEM programs/partnerships? HHS has been registered with the MA DEP’s “Green Team” since 2008 and has been honored by them on several occasions. HHS also enjoys productive environmental partnerships with the Weir River Watershed Association (WRWA), MA Dept. of Fish & Game, Aquarion Water Company, the Alliance for Climate Education, Sustainable South Shore, and Holly Hill Farm. In addition, partnerships with a wide range of local businesses (e.g., Nona’s Homemade Ice Cream, Atlantic Bagel, REI, Taco Bell, Crow Point Pizzeria, Peel Pizza, Wahlburger’s, Red Eye Roasters, b.good, Chipotle, and Starbuck’s) has enabled the HHS Green Team to incentivize sustainable behaviors with creative programs. HHS also belongs to the international “Green Schools Alliance” and was recognized on their website as a “Featured School” in April 2014.

Pillar I: Reduced Environmental Impact and Costs

Energy

Building Specifications

<p>Building Constructed (year): <u>1958</u> Area: <u>217,000 square feet</u></p> <p>Renovations: <u>2000</u></p> <p>% of building renovated: <u>90%</u></p>	<p>Meets green building standard: <u>N/A</u> Year certified: <u>N/A</u> Total area certified: <u>N/A</u></p> <p>Green/Efficiency Features (heating, windows, insulation, etc.): <u>HHS transitioned from oil heat to natural gas (in order to improve fuel efficiency) a decade ago. Re-lamping projects have been completed in many parts of the building.</u></p>
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Please note: If your city or town is a Massachusetts Green Community, energy reduction and other information should already be available through your municipality, please see- <http://www.mass.gov/eea/energy-utilities-clean-tech/green-communities/>.

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

Yes No Percentage reduction: 9% Over (m/yy - m/yy): 7/08-7/13

Initial GHG emissions rate (MT eCO₂/person): 110.58 (FY09)

Final GHG emissions rate (MT eCO₂/person): 100.8 (FY13)

Offsets: None to date; however, HHS submitted a Statement of Intent with the Green Schools Renewable Energy Purchasing Consortium in November 2013. High school administration lobbied for the purchase renewable energy certificates (RECs) through the consortium in 2014 but was unable at that time to convince district administration to make this purchase. We intend to revisit this subject in the future. How did you calculate the reduction? Analysis of utility bills from Direct Energy (the school's supplier of natural gas) shows a downward trend in our use of natural gas for heating over a five-year time span. Note: HHS converted from oil to natural gas heating in 2004; this transition has yielded significant savings by contributing to greater fuel efficiency. The proposed FY16 budget includes a request for \$80K to replace the water heater (ca. 1998) with a more efficient model. Also, the HPS business manager is actively exploring options for replacing the boilers (ca. 1998) with more efficient alternatives.

2. Do you track resource use in EPA ENERGY STAR Portfolio Manager? Yes No

If no, do you use a different energy portfolio? As mentioned previously, the HHS Assistant Principal and Green Team advisor recently completed an EPA webinar ("Sensible Steps for Energy Efficiency") on the use of EPA Energy Star Portfolio Manager. HHS hopes to begin implementation of this program in FY16.

If yes, what is your score? N/A If score is above a 75, have you applied for and received ENERGY STAR certification?

Yes No Year: _____

3. Has your school reduced its total non-transportation energy use from an initial baseline? Yes No

Current energy usage (kBTU/student/year): 1329.93

Current energy usage (kBTU/sq. ft./year): 7.35

Percentage reduction: 12% over (m/yy - mm/yy): FY08-FY14

How did you document this reduction? Analysis of meter readings and bills from Hingham Municipal Light Plant (HMLP) shows a steady decline in electricity usage over the past seven years. Note: HHS has addressed many of the recommendations made by ECHO (Foxborough, MA) in a professional energy audit that was conducted in September 2011. For example, HHS installed forty new smart strips in classrooms and computer labs in 2012. "Flip that Switch" stickers were installed by student volunteers in all classrooms. HHS has also made major investments in re-lamping projects (e.g., the installation of T5 tubes on motion sensors in the gymnasium in July 2012) and will continue to do so in years to come. The installation of numerous variable speed drives has also contributed to significant electrical savings. The FY14 budget contained a \$39,000 allocation for additional energy efficiency projects, many of which were proposed by a member of the HHS Class of 2014 (active on the school's Green Team) who analyzed (as part of a Senior Capstone project) how those dollars could yield the greatest impact. During July and August 2014, HHS completed several re-lamping projects, including the replacement of old bulbs with new T-8 fluorescent bulbs throughout a major wing of the building.

4. What percentage of your school's energy is obtained from:

On-site renewable energy generation: 0% (temporarily) Type Note: The school's solar panels (located on high school roof) were recently damaged in a wind storm and have not yet been repaired.

Purchased renewable energy: one to date. However, HHS submitted a Statement of Intent with the Green Schools Renewable Energy Purchasing Consortium in November 2013. HHS administrators had hoped to purchase renewable energy certificates (RECs) through the consortium in 2014 but have so far been unable to convince district-level administrators to make this transition. Type In its Statement of Intent with the Green Schools Renewable Energy Purchasing Consortium, HHS expressed a willingness to purchase any form of renewable energy.

Participation in USDA Fuel for Schools, DOE Wind for Schools or other federal or state school energy program:
N/A

Water and Grounds

5. Can you demonstrate a reduction in your school's total water consumption from an initial baseline? (If you are not tracking on a school level, please contact the district or town)

Average Baseline water use (gallons per occupant): 87.2 gallons per occupant per month (FY06 thru FY12)

Current water use (gallons per occupant): 68.01 gallons per occupant per month (FY14)

Percentage reduction in domestic water use: 22%

Percentage reduction in irrigation water use: Unknown. However, HHS has seen a significant (albeit statistically unknown) reduction in this area due to the completion (in October 2013) of a multipurpose athletic field with a synthetic surface that requires no irrigation. It should also be noted that recent reductions in water usage have been achieved despite the installation of three hydration stations which have contributed (probably in a significant way) to an increase in the consumption of drinking water. In an effort to promote the use of re-usable water bottles, HHS has installed (with financial support from both Aquarion Water Company and the local PTO) three stations that provide cold, filtered tap water at no cost. Located in the main lobby, the school cafeteria, and a busy upstairs corridor, these stations have proven enormously popular with students and staff. The latest addition to this collection was unveiled on Earth Day 2013 with a ribbon cutting ceremony that received attention from the local press. In the nineteen months since then, according to a built-in counter, this one station has prevented more than 30,000 single-use plastic bottles from entering landfills. The wide use of all three stations contributes to the school's water consumption, but this should be viewed as an overall benefit to the environment because of the extent to which it has boosted the popularity of reusable water bottles.

Time period measured (mm/yyyy - mm/yyyy): 07/2005 – 07/2014

How did you document this reduction (ie. ENERGY STAR Portfolio Manager, etc.) Utility bills

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

6. What percentage of your landscaping is considered water-efficient and/or regionally appropriate? 95%

Types of plants used and location: School groundskeepers over-seed playing fields every year with drought-tolerant grass seed that is appropriate to the New England climate. Almost all plantings (e.g., yews, junipers and daylilies) are water-efficient and do not require irrigation.

7. Describe alternate water sources used for irrigation. All grounds and playing fields are watered by a sprinkler system that is fed by a well. The watering schedule varies, but is closely monitored by the field maintenance department in order to assure efficient watering. In November 2013, two rain barrels donated by Aquarion Water Company were added to the school garden (located in an interior courtyard) to irrigate the raised beds and water the plants grown in the greenhouse.

8. Describe how the water source is protected from potential contaminants, including lead and efforts to reduce stormwater runoff and/or reduce impermeable surfaces. Aquarion Water Company is the public water supply company that serves our town and all of its schools. According to its website, Aquarion "continually conducts site inspections and monitors land use activities and water quality" at all of its watershed and aquifer areas. "Strict regulations protect...water supplies by

safeguarding the lands that surround...reservoirs and wellfields, and Aquarion is vigilant in monitoring activities on those lands. Enforcement officers...regularly patrol these properties and take ...action when necessary.” Moreover, “All visitors to [Aquarion] properties need a valid permit...and certain activities such as camping, dog walking...and the use of motorized vehicles are prohibited.” Aquarion’s cross-connection surveyors and testers (certified by the MA Department of Environmental Protection) conduct bi-annual surveys and test backflow prevention devices at our facility in order to ensure regulatory compliance. The school’s three hydration stations also contain special filtration systems that provide additional protection.

The new HHS synthetic multi-purpose athletic field has a permeable surface made from recycled rubber. As part of that construction project, drains were added to newly regraded adjacent fields. These are adjoined by vegetated swales that recharge the aquifer beneath the area. All stormwater runoff is diverted to a stream, not a sewer system. In collaboration with the WRWA and the MA DEP (RIFLS Program), the HHS Science Department installed a USGS Stream Gage Monitoring Site beside our fields in September 2013. Several times per week, HHS students upload stream gage observations to the RIFLS database for use in policy decisions. Together with the WRWA, HHS students also participated in a town forum series sponsored by Aquarion Water to promote the reduction of runoff and impermeable surfaces. The WRWA Director has also visited several HHS science classes to discuss the impact of impermeable surfaces on runoff.

9. What percentage of the school grounds are devoted to ecologically beneficial uses? Approximately 20%. One interior courtyard, adjacent to our school cafeteria, has been redesigned as a green learning space. It features a greenhouse (completed in June 2014) and ten raised garden beds devoted to sustainable food production. The raised beds were constructed from reclaimed lumber and the soil has been enriched with compost from our cafeteria composting program. Educators from Holly Hill Farm, an organic farm in Cohasset, MA, have led numerous workshops for HHS staff and students about sustainable, environmentally conscious gardening practices. Two additional courtyards have been landscaped with a variety of native, drought resistant bushes and fruit trees, not only to grow food but also to provide habitat for birds and diverse flora for pollinators. School grounds include woods adjoined by a flood plain and stream. These areas are home to a wide variety of wildlife, including geese, turkeys, rabbits, coyotes, hawks and fisher cats. Brush piles generated by the school’s yard waste also serve as protected wildlife habitats in these areas. A school groundskeeper trained in forestry is careful to manage the wood line properly and avoids “over-cutting” during regular maintenance. Leaves from the school’s many trees are composted on the edge of the grounds. An adjacent stream, part of the Weir River Watershed, serves as an outdoor learning lab for Environmental Science classes and HHS Green Team members who analyze watershed features like streamflow and water quality. Students also monitor a smelt habitat restoration project at Foundry Pond, several miles downstream. In Spring of 2013, students worked with biologists from the Weir River Watershed Association to establish native plants in the smelt habitat to provide shade for drought-sensitive smelt eggs. In Spring of 2014, HHS science staff obtained a permit from the MA Dept. of Fish & Game to “head start” rainbow smelt from the Foundry Pond site, and worked with MA Fish & Game biologists to incubate smelt eggs and release larvae. Plans are in place to continue the smelt head start project in Spring of 2015.

Waste

Do you have waste reduction, recycling, or composting programs? Try the math:

10. What percentage of solid waste is diverted from landfilling or incinerating due to reduction, recycling and/or composting?.

A - Monthly garbage service in cubic yards (garbage dumpster size(s) x number of collections per month x percentage full when emptied or collected): 22 cubic yards of dumpster space x 12 collections per month x 50% full = 132 cubic yards of monthly garbage service

B - Monthly recycling volume in cubic yards (recycling dumpster sizes(s) x number of collections per month x percentage full when emptied or collected): This formula does not apply perfectly in our case since commingled recyclables (i.e., plastic, aluminum, tin, glass, etc.) and cardboard are not collected in dumpsters; only paper is collected in a dumpster. The volume of recycling each month is approximately 25 cubic yards. It should be noted that recycling volume has actually declined during recent years (despite improved collection efforts) because of the elimination of soda vending machines as well as school-wide efforts to 1) reduce paper use; and 2) increase the use of re-usable water bottles by promoting use of our new hydration stations. The latter step has led to a dramatic decline in recyclable single-

use plastic water bottles.

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): Again, the formula does not apply perfectly in our case since compost is not collected in dumpsters. However, we send at least fifty pounds of compostable food scraps directly to compost containers (located behind the school) every day after lunch. The volume of compost each month is approximately 7 cubic yards. Composting efforts have been greatly boosted by the September 2012 replacement of polystyrene trays with a compostable alternative.

Recycling Rate = $((B + C) \div (A + B + C) \times 100)$: $(25+7) \div (132 + 25 + 7) = 20\%$ Monthly waste generated per person = (A/number of students and staff): 0.11 cubic yards per person

11. Do you use any other post-consumer, recycled, responsibly managed or organic materials in your school (paper, napkins, silverware, building or supply materials etc)?

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

Flammable liquids <u>Ethanol; methanol; hexane; mineral oil</u>	Corrosive liquids <u>Various acids and bases</u>	Toxics <u>Various compounds</u>	Mercury <u>None allowed under MA law</u>	Other: <u>Some acidic gases (under fume hoods)</u>
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How is this measured? HHS conducted a comprehensive chemical inventory and audit in 2009. With guidance from Dr. Dwight Peavey, a senior scientist at EPA headquarters in Boston who led the inventory and audit, HHS has since microscaled most chemistry labs and transitioned to a pharmacy approach to chemical use.

How is hazardous waste disposal tracked? All science lab sinks discharge into a neutralization tank that is maintained and monitored by trained members of the district's maintenance department. Light bulbs containing mercury are appropriately collected and recycled.

Any other measures taken to reduce solid waste and eliminate hazardous waste The microscaling of most chemistry labs and the transition to a pharmacy approach to chemical use represent an important step toward addressing waste issues. As mentioned previously, all science lab sinks discharge into a neutralization tank that is constantly monitored by trained staff members. All light bulbs, alarm batteries and old computers are collected by the local Department of Public Works (DPW) and subsequently recycled.

13. Which green cleaning custodial standard is used? HHS is currently piloting several products that meet FAC 59 and/or EPA standards

What percentage of all products is certified? 15% (EPA or FAC 59)

What specific third party certified green cleaning product standard does your school use? HHS launched the pilot of a green cleaning program in November 2013. M.D. Stetson Company has provided samples of several FAC 59 products, including a glass cleaner, a peroxide multi-surface cleaner, and a heavy-duty disinfectant that also meets the requirements for EPA certification. M.D. Stetson, a vendor with whom HHS enjoys a longstanding relationship, is included on the MA FAC 59 list of certified green cleaning vendors but prior to November 2013, the school had only purchased traditional cleaning products. Upon completion of the current pilot program, the school administration plans to expand the program district wide.

Alternative Transportation

14. 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) 69% of students qualify for district-funded bus transportation. Most of those students take the bus to school every day. Altogether, approximately 80% of students walk, bike, bus or carpool to school.

15. Has your school implemented?

organized carpool program

designated carpool parking stalls

a well-publicized no idling policy that applies to all vehicles (including school buses)

Vehicle loading/unloading areas are at least 25 feet from building air intakes, doors, and windows.

Note: Although there is an air intake less than 25 feet from one of the school's three dumpsters, that intake is turned off

during the pre-dawn hours when the dumpster is emptied. All other vehicles (including school buses) are kept at least 25 feet from air intakes, doors and windows.

Safe Pedestrian Routes to school or Safe Routes to School. Note: Although HHS does not have a formal Safe Routes Policy, there are sidewalks on all routes to our high school. The Town of Hingham maintains a system of safe, efficient and nearly universal sidewalks surrounding all schools in town. These sidewalks are aggressively cleared of snow in the winter to ensure that they can always be used safely.

eco-friendly buses (clean burning, electric, etc)

16. Describe how your school transportation use is efficient and has reduced its environmental impact, including any innovative or unique practices and partnerships. Most students take the bus to and from school every day. This form of public transportation is highly efficient. Recent efforts to increase biking, walking and carpooling have proven successful, thereby reducing the school's overall carbon footprint and environmental impact. Bike riding, in particular, has increased dramatically in recent years. Finally, the school implemented a "Green Spaces" parking program in November 2013, designating the most desirable parking spots to carpoolers and others who have made significant contributions to the school's environmental initiatives. Students are consistently urged to ride their bicycles to school. Regular "Pack the Rack" days are aggressively promoted and incentive programs (including the randomized distribution of "Go Green HHS" T-shirts, restaurant gift cards, and other items) foster student participation. In March 2012 Andrew Ference (professional hockey player and ardent environmentalist) greeted students at the bike rack after school. The star defenseman's visit to HHS was profiled in a video produced by National Geographic and posted on their website. That video was shown to the entire student body during school and distributed to the broader school community through the principal's email distribution list.

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

Environmental Health

All Massachusetts schools are required to file an IPM plan, and review on an annual basis. To create, edit, or view your plan, please see- <http://massnrc.org/ipm/>

1. Describe your school's Integrated Pest Management efforts, including IPM/green certifications earned, routine inspections, pest identification, monitoring, record-keeping, etc.:

In compliance with the Act Protecting Children and Families from Harmful Pesticides, Hingham High School has filed an Integrated Pest Management (IPM) Plan with the MA Department of Agriculture (MDAR). The stated goal of that plan is to "control structural and landscape pests and minimize exposure of children, faculty, and staff to pesticides." All appropriate staff members are trained in the IPM Plan. Inspections occur at least once a month. Cultural practices (e.g., water management, irrigation, deep tine aeration, organic-based fertilization, cleaning mowers between fields, hand weeding, etc.) reduce the need for pesticides.

2. What is the volume of your annual pesticide use (gal/student/year)? Describe efforts to reduce use:

The annual volume of pesticide use is unknown. However, our rapidly-growing school garden uses no chemical pesticides or fertilizers. Working under the supervision of staff members from Holly Hill Farm, our student gardeners use only organic methods.

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.

Our school prohibits smoking on campus and in public school buses. Tobacco use (and even possession) is banned on all school grounds. This policy is posted prominently in various locations.

Our school has identified and properly removed sources of elemental mercury and prohibits its purchase and use in the school. The school uses only light bulbs that meet state standards for safety.

Our school uses fuel burning appliances and has taken steps to protect occupants from carbon monoxide (CO). Cafeteria workers use gas stoves to prepare school meals. Appropriate steps are taken to ensure that the school continues to meet stringent state regulations and protect occupants from carbon monoxide.

Our school does not have any fuel burning combustion appliances

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. Last date of radon testing: 1992

Our school has identified any wood playground or other structures that contain chromate copper arsenate and has taken steps to eliminate exposure

4. Describe actions your school takes to prevent exposure to asthma triggers in and around the school.

The school campus is classified as a “No Idling Zone” where drivers may not idle their cars for more than three minutes. Anti-idling signs are posted prominently around the building, especially in the most commonly-used pick-up and drop-off locations. The ongoing transition to green cleaning products (now being piloted) has replaced asthmogenic products with less toxic alternatives. The custodial staff has embraced this policy change.

5. Describe actions your school takes to: manages and controls student and staff exposure to chemicals (including pesticides) routinely used in the school; control moisture from leaks, condensation, and excess humidity and promptly cleanup mold or removes moldy materials when it is found; inspect and maintain the building’s ventilation system and all unit ventilators to ensure they are clean and operating properly; actions to ensure that all classrooms and other spaces are adequately ventilated with outside air, consistent with state or local codes, or national ventilation standards. The Integrated Pest Management (IPM) Plan on file with the MDAR addresses the use of both indoor and outdoor chemicals. All relevant staff members receive annual training about the plan, which aims to “reduce...exposure to pesticides and pesticide residue whenever possible.” Inspections occur at least once a month. Cultural practices (e.g., eliminating access to pests, eliminating shelter and harborage, eliminating sources of food and water, frequent cleaning, etc.) are designed to reduce the need for pesticides and other chemicals. School officials implement a comprehensive preventive maintenance plan that includes the regular cleaning of drains and the re-sealing of rubber roof membranes to prevent water penetration. On the rare occasions when penetration occurs, the immediate response always includes the repair of any leaks, the replacement of damaged ceiling tiles and thorough cleaning of the affected area. Univents are present in every classroom. Explosion-proof exhaust motor systems have been installed in all laboratory areas, including the wood shop and all science classrooms. All air exchanges met ASHRAE standards at the time of their installation in 1998. All filters and roof-top exhausts are changed at least twice per year. In addition, a flue-assisted “fail-safe” safety feature prevents the boiler from firing if the system is not functioning properly. All ventilation systems are routinely inspected to ensure their proper operation as designed. Preventive maintenance procedures completed by members of the school’s maintenance department help to ensure consistency with strict state and local codes.

6. Describe any 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. The district’s Supervisor of Buildings and Grounds has been trained to implement the EPA IAQ Tools for Schools program and does so regularly. Routine (almost constant) inspections allow him and his staff to identify health and safety issues. The Tools for Schools guidelines (and the Indoor Air Quality Action Kit) influence any corrective actions that need to be taken. In 2012, an outside environmental consultant advised on air quality in the science wing, resulting in extension of “stink pipe” and re-routing of an intake vent, which improved air quality in this part of the building.

Nutrition and Fitness

7. 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.

[X] Our school participates in the USDA's Healthier US School Challenge. Level and year: N/A. All ninth-grade students take a health course in which they use the USDA Supertracker program to analyze their diet and assess physical activity. All Health (grades 9 & 10) and Family/Consumer Science courses (9-12) use the *Choose My Plate* teaching materials. The *Choose My Plate* curriculum is also used extensively in all K-5 classrooms in our district.

[X] Our school participates in a Farm to School program to use local, fresh food. With the guidance of education experts from a local organic farm (Holly Hill Farm in neighboring Cohasset, MA) students from our woodworking classes constructed several large raised bed frames from reclaimed (and untreated) lumber. Student volunteers filled the frames with compost generated on site and plant seasonally appropriate crops. In November 2013, a small apple orchard was voluntarily established in an interior courtyard by custodial staff using money from recycled bottles and cans.

[X] Our school has an on-site food garden. With the guidance of education experts from a local organic farm (Holly Hill Farm in neighboring Cohasset, MA) students from our woodworking classes constructed several large raised bed frames from reclaimed (and untreated) lumber. Student volunteers filled the frames with compost generated on site and plant seasonally appropriate crops. In November 2013, a small apple orchard was voluntarily established in an interior courtyard by custodial staff using money from recycled bottles and cans.

[X] Our school garden supplies food for our students in the cafeteria, a cooking or garden class or to the community. Hingham High School has an extensive courtyard garden that includes ten raised beds for growing vegetables and four apple trees. Peas, spinach, arugula, rhubarb, beans, garlic, perennial herbs and other vegetables are seasonally harvested for use by cooking classes and the cafeteria. Construction of a large greenhouse in the courtyard was completed in June 2014. The \$80,000 for construction was raised through a major grant (the "Green Effect" contest sponsored by National Geographic and Sun Chips) and additional Green Team fundraising. Next week (on December 17, 2014), HHS kitchen staff will serve salad and pasta with an arugula-and-garlic pesto made from produce that was grown hydroponically in our greenhouse.

[] Food purchased by our school is certified as "environmentally preferable." Percentage: N/A Type: Our main vendors (Thurston and Costa Foods) profess a lack of familiarity with the "environmentally preferable" certification. However, Thurston assures us that it sources their fresh produce from local growers when possible. Thurston is a Gold Member of the School Nutrition Association and a Distributor of Healthy Snacks and Vending "A" List developed by the John Stalker Institute.

[X] Our students spent at least 120 minutes per week over the past year in school supervised physical education. All students must meet physical education and health requirements every year. In grades 9 and 10, all students must complete a semester course in physical education and health. The course meets 72 times per semester; thus, at 57 minutes per period, this represents about 4104 minutes (68.4 hours) of physical education per semester; the weekly rate (228 minutes per week, on average) is nearly double the benchmark used here. Juniors and seniors have a variety of options by which they may complete the PE requirement. Those options include: 1) taking an elective PE course at the school (which meets the same 228 minutes per week standard explained above); 2) playing on one of our 61 interscholastic teams for at least one season (which far exceeds the time commitment required of the course); 3) participating in a before and/or after school intramural weight training and conditioning program; and 4) participating in a fitness/exercise program at an approved outside facility.

[X] At least 50% of our students' annual physical education takes place outdoors. Physical education classes take full advantage of the school's outdoor tennis courts, playing fields and track (renovated in 2012). Teachers stress the value of exercising outside for as much of the year as possible. In sum, about 75% of physical education takes place outdoors, despite the often harsh New England weather. As our physical education staff well appreciates, research shows that exercising outside and interacting with the environment plays an important role in child development. The mountain biking unit (highlighted below) is perhaps the finest example of outdoors education. However, units of instruction in lifetime activities (e.g., golf, tennis, archery, etc.) and team sports (e.g., touch football, Ultimate Frisbee, softball, and soccer) all play a valuable role in our PE curriculum.

[X] Health measures are integrated into assessments. As part of the compulsory ninth-grade Health class, all students complete a personal risk assessment that includes BMI, body fat analysis, and waist-to-hip ratio measurements. Data reveals that obesity is uncommon among our students. All ninth-grade students also complete a personalized diet and physical activity analysis using an online tool (www.supertracker.usda.gov) developed by the USDA.

[X] Students have participated in the EPA's Sunwise (or equivalent program). The Children's Melanoma Prevention Foundation (a local provider) delivers its SUNAware program to all middle school students in our district. That program is reinforced in the Health course taken by all ninth-grade students. Another valued partner, the Melanoma Education Foundation, supplies educational materials to support the Health curriculum and provides free bookmarks to all students.

8. Describe the type of outdoor education, exercise and recreation available. A comprehensive PE program introduces students to a wide array of fitness activities, games, and lifelong athletic pursuits. Students participate in daily exercises that improve balance, agility, strength, flexibility, and stamina. Moreover, nearly three-quarters of our students participate in an interscholastic sport. HHS fields a total of 61 interscholastic teams, 36 of those at the varsity level. Many of those teams (including the hugely popular track and rowing programs) do not make cuts and are therefore available to all students regardless of athletic ability or skill level. An adjacent stream, part of the Weir River Watershed, serves as an outdoor learning lab for environmental science classes and HHS Green Team students for the purpose of study of watershed features such as streamflow and water quality. Students also have a study site several miles downstream at Foundry Pond, which is the site of a smelt habitat restoration project monitored by students. Students use nearby Wompatuck State Park as the setting for Television Production videos. Through World Challenge Expeditions, HHS students have hiked through Vietnam, Peru, Borneo and South Africa; students participate in rigorous outdoor training before their expedition.

9. Describe any other efforts to improve nutrition and fitness, highlighting innovative or unique practices and partnerships. The physical education program is bolstered by an innovative mountain biking program. Thanks to major grants from local organizations (including the PTO and the Hingham Sports Partnership) HHS students learn how to safely ride a mountain bike on various types of trails in Wompatuck State Park, a 4000-acre recreational area located less than a mile from our campus. Cycling in this wooded environment helps students to combat "Nature Deficit Disorder" while at the same time improving their physical fitness. The time spent in the forest has proven to reduce students' stress while improving their self-confidence and creativity. The cafeteria now offers gluten free alternatives, meatless burgers, and other more environmentally friendly vegetarian options. The school has banned the sale of soft drinks, candy, and baked desserts both during and after school. Among faculty there are several running groups, a regular weekly basketball game, and an annual "Biggest Loser" (weight loss) competition.

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

10. 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: During regularly scheduled professional development workshops, PE and Health teachers meet with the school nurse and counselors to discuss a coordinated approach to health-related issues.

11. Does your school partner 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:

In 2012, HHS joined with the Hingham Police Department to restore a full-time School Resource Officer (SRO) to the high school staff. The SRO is a uniformed police officer who not only bolsters student safety in the building but also regularly addresses Health classes about issues related to drugs and alcohol, delivers Rape Aggression Defense (RAD) training to all female students, and teaches a popular course on Criminal Justice. Meanwhile, a task force (known as "Mobilizing the Community," or MTC) was organized in 2012 to combat underage drinking. Though initiated by counselors and administrators from the high school, the task force is now co-chaired by the school superintendent and the chief of police. It brings together a wide range of stakeholders, including parents, local business leaders, clergy, and law enforcement officials. The task force meets quarterly to review policy and plan initiatives to promote healthy decisions by students; some of these initiatives (e.g., guest speakers, assemblies, and participation in a SADD marketing campaign) have been generously funded by a variety of local business partners.

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

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

(1). HHS employs six full-time school counselors in addition to a full-time adjustment counselor; (2) a 2012 grant drafted by the Director of School Counseling enabled the school to establish a Transition Room (TR), among the first of its kind in the area; staffed by a full-time director, the TR serves students returning to school from extended absences that are often related to mental health issues; (3) for more than a decade, a school-wide Climate Committee (chaired by the principal) has met monthly to examine issues related to school culture and climate; that group regularly sponsors guest speakers (e.g., former basketball star and recovering addict Chris Herren) for students and book groups (e.g., *The Price of Privilege: How Parental Pressure and Material Advantage Are Creating a Generation of Disconnected and Unhappy Kids*) for parents; (4) strong anti-bullying policies are reviewed during school-wide assemblies at the beginning of each school year and reinforced by additional assemblies (e.g., John Halligan's "Ryan's Story" presentation, a visit from noted expert Dr. Elizabeth Englander, etc.) each year; (5) a well-established Peer Facilitator program trains student leaders through an award-winning curriculum created by the Anti-Defamation League (ADL); trained facilitators lead workshops in all 9th- and 10-grade English classes every year; and (6) a Peacekeepers class trains students as Peer Mediators; students who have completed the course help fellow students to resolve conflicts peacefully.

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. All ninth- and tenth-grade Biology students must complete a culminating project that requires them to research, design and deliver a presentation on a 21st Century topic. Most of those topics (e.g., climate change, bioremediation, eutrophication, deforestation, biofuels, oil spills, preservation of coral reefs, GMOs, invasive species, etc.) have an environmental focus.

[X] Environmental and sustainability concepts are integrated throughout the curriculum and assessments.

Curriculum: (1) Last month, on America Recycles Day, almost every member of the faculty joined in the school's seventh-annual "Teach In" on environmental issues. Whether by bringing their classes to hear a guest speaker, viewing a film, or by connecting their own lessons to an environmental topic, teachers showed nearly unanimous support for environmentalism. (2) The science department integrates environmental and sustainability concepts throughout its curriculum, not only in the Environmental Science and Oceanography electives but elsewhere (e.g., the ecology unit in biology classes, examination of the school's solar panels in electronics classes, etc.). (3) Electronics, Auto Shop and Wood Shop explore renewable energy sources, green technology, self-reliance and sustainable forestry. (4) All History classes examine the role of climate, disease, population, urbanization and the impact of humans on the environment. (5) Economics addresses market and government efforts to reduce negative environmental externalities. (6) Math classes use environmental issues as the context for math problem sets. (7) Emulating the award-winning model initially created at Manchester-Essex Regional High School, HHS plans to initiate a Green Scholars Program during the 2015-2016 school year. Toward that end, HHS Assistant Principal and Green Team chair Richard Swanson completed training (May 2013) to earn "Green Scholars" certification.

Assessments: (1) The MA ecology standards are assessed not only in our science classrooms but also on the Biology MCAS statewide assessment. (2) The AP Biology Exam also includes assessment of ecology concepts. Environmental Science and Oceanography courses assess mastery of a variety of environmental and sustainability concepts. (3) All ninth grade World History students write essays on both the impact of environment on early civilizations and the role of environmental stressors on the fall of the Roman empire. (4) All tenth-grade World History and AP World students complete a major written assessment (Document Based Question) on the environmental impact of the Industrial Revolution. (5) All AP World History students complete an essay on the biological and demographic consequences of the Columbian Exchange; the AP World History College Board exam specifically targets human environmental impacts.

(6) The Economics final exam includes an essay on social costs and negative externalities related to environmental degradation.

[X] Students evidence high levels of proficiency in these courses and assessments. 100% of the Biology students (Grades 9-10) at Hingham High School achieved a passing score on the 2013 MA Biology MCAS exam, a statewide assessment that includes ecology standards. 100% of AP World History students score 3 or better every year that the course has been offered, with most students scoring 4 or 5.

[X] Professional development in environmental and sustainability education are provided to teachers. Heliotronics, a solar energy firm, offers HHS staff professional education in their Solar Learning Lab. Hingham Tech Squad presented a mandatory workshop to all faculty on using green technology to reduce paper use. A four session version of this training called "Scan if You Can" was offered for PDPs. Faculty and students attended the 2013 Green Ribbon Conference. An administrator earned Green Scholar Certification at Manchester Essex Regional School. "Green Week" and the annual America Recycles Day "Teach In" include teacher professional development. Many faculty members have taken graduate courses (e.g., Primary Source's "Teaching for Global Understanding in the 21st Century") that promote environmentalism. The district reimburses teachers for such courses.

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: 0% Percentage scoring a 3 or higher: N/A. Please note: Our L2 (honors) and L3 (college prep) Environmental Science course features many of the labs used in the AP Environmental Science curriculum. However, it is our belief that structuring the elective as a L2/L3 offering, rather than as an AP course, enables our teachers to reach a more diverse cross section of students and thereby shape the environmental consciousness of a greater number of future citizens.

Additional AP courses offered in the STEM area: Biology, Calculus, Chemistry, Physics, Statistics

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? (1) All biology students participate in a culminating project in which they research, design and share a presentation on a 21st Century topic. Sample topics, many of which have an environmental focus, include bioremediation, eutrophication, deforestation, biofuels, oil spills, preservation of coral reefs, GMOs, and invasive species. (2) Environmental and sustainability concepts are integrated throughout the biology curriculum, especially in the ecology unit. (3) Chemistry labs have been redesigned to microscale to encourage green practice. (4) Electronics classes utilize solar panels in a variety of curriculum units. (5) Environmental Science and Oceanography classes integrate sustainability concepts throughout. (6) Television Production classes use digital video recording and editing technologies to produce and broadcast environmental promotions, green news and composting "how-to" videos. (7) Hingham's student Tech Squad offered "Scan If You Can" training to help teachers use digital technology to reduce paper and copier use.

4. How does your school use sustainability and the environment as a context for learning green technologies and career pathways? Among the many examples: (1) students gain experience in hydroponics by completing science projects in the school's new greenhouse; (2) a Senior Capstone student completed an internship with Prism Energy to learn how to conduct energy audits; he shared his experience with a large student audience during our third annual Green Week in March 2014; (3) a second Senior Capstone student collaborated with the HPS Facilities Manager, Business Director and private firms to determine the most effective way to spend the \$39,000 allotted in the FY14 school budget for improving energy efficiency at the high school; (4) a third Senior Capstone student built and sold Adirondack chairs made out of certified sustainably harvested lumber; (5) several students attended the Environmental Leadership Summer Program at UMass/Amherst in July-August 2013; (6) guest speakers (e.g., director of a local watershed authority, an electrical engineer/auditor, a water filtration entrepreneur, et al.) inspire students to consider environmental careers; (7) the school's solar panels promote science class discussions of renewable energy. (8) Economics classes regularly examine the role of entrepreneurs in reducing environmental costs. (9) Technical Drawing and Woodworking classes include green building units; (10) Consumer Auto classes explore hybrid technologies; and (11) a new office of College and Career Planning (established last year) helps

students position themselves for STEM/21st century careers.

5. Describe students' civic/community engagement projects integrating environment and sustainability topics.

(1) Concern about stormwater run-off led to an ongoing collaboration with the WRWA; (2) with support from both Jordan's Furniture and Nike, students have collected sneakers and sporting goods for reuse and recycling, winning multiple awards in the process; (3) Holly Hill Farm hosts field trips for Environmental Science students in addition to running composting and gardening workshops at the high school campus; (4) students sell our compost at the Hingham Farmers' Market; (4) a student Green Team member has become a *Hingham Journal* contributing writer focusing on community environmental issues; and (5) Senior Capstone environmental projects have students collaborating with private industry (e.g., an internship with Prism Energy) and district administrators, including the Business Director and Facilities Manager. On campus, students have launched and sustained a variety of green initiatives, including: (1) on the most recent Green Apple Day of Service (September 2014) students, faculty, parents and other community members sifted compost and added a new raised bed to the school garden; (2) sports teams supervise cafeteria compost and recycling stations during weekly "Slash the Trash" competitions; student volunteers collect commingled recyclables throughout the building; (3) students produce videos to promote composting, recycling and the use of hydration stations; (4) others have designed T-shirts that are distributed as rewards for "Random Acts of Green-ness;" and (5) HHS Green Team members have visited the local middle and elementary schools to mentor younger students there.

6. Describe students' meaningful outdoor learning experiences at every grade level. All students breathe fresh air (sometimes in the adjacent state park, enjoying the forest trails on mountain bikes!) during their Physical Education classes. They often go outdoors during English class to discuss poetry in a courtyard landscaped by a local garden club. In Biology classes, all students examine native species (focusing on amphibians) and often do so alongside streams that border our school grounds. Students in the popular Environmental Science elective regularly visit those same streams, not only to monitor water quality and flow but also to examine macroinvertebrate diversity. Oceanography classes not only feature case studies from neighboring Stellwagon Bank, but also take to the sea every spring for a whale watch. Junior American Studies students take an outdoor field trip to early colonial sites, including a famous cemetery (Old Ship Burying Ground), to explore how geography affected colonial development. These opportunities will soon be bolstered by the construction of an outdoor classroom adjacent to the greenhouse and school garden; this outdoor learning space was envisioned by a Green Team member and its construction is now underway as part of his Eagle Scout project.

7. Describe how outdoor learning is used to teach an array of subjects in contexts, engage the broader community, and develop civic skills. (1) Every day after lunch, students carry buckets of fruit and vegetable scraps out to the compost bins. Students maintain the compost piles, thereby completing green service in lieu of study hall; (2) students sell some of the finished product (what is not destined for the new school garden) at a local Farmer's Market; (3) compost proceeds go to the school cafeteria to defray the cost of the compostable plates that replaced polystyrene trays in 2012; students thus gain powerful lessons in science, economics and civic action; (4) over the last six years, HHS students have taken World Challenge Expeditions to India, Vietnam, Borneo, Peru and South Africa; World Challenge has a "leave no trace policy" stewardship policy; in Borneo, students completed a service project in the Kudat Rainforest where they transplanted seedlings as part of a larger reforestation program; upon returning home from these expeditions, HHS students discuss their experiences at school-wide assemblies.

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.

(1) Heliotronics, a solar monitoring company based in Hingham, has granted access to their Solar Learning Lab for teacher professional development courses. (2) HHS joined the Green Schools Alliance in 2013 to learn and share best practices; it was recognized as the "Featured School" in April 2014; (3) Primary Source, a professional development organization for teachers, has invited the HHS Green Team to present educator workshops at Boston College for the last seven years; (4) HHS Green Team members have delivered a "Launching Green Initiatives" workshop to the annual summer conference of the Massachusetts Secondary Schools Administrators Association (MSSAA) in 2012 and 2013; (5) Green Team advisor Richard Swanson delivered a version of the same presentation as the keynote speaker at a forum organized by the Kingston (MA) Recycling Committee in November 2014; that presentation will be aired locally on PACTV 's Public Access Channel, beginning the week of December 15, 2014; (6) local businesses (e.g. Atlantic Bagel, Crow Point Pizzeria, Peel Pizza,

Redeye Roasters, Wahlburger's, and Nona's Homemade Ice Cream) and major chains (Starbucks, Taco Bell, REI, & b.good) have provided incentives to encourage recycling, composting and sustainable behaviors; (7) Siemens mentored a team of students who conducted an energy audit at a local elementary school in 2009; (8) the local Parent Teachers' Organization (PTO) and the Hingham Education Foundation (HEF) have endorsed environmental programs with generous grants (including funding the Heliotronics Solar Learning Lab access); (9) Hingham Educational Cable regularly airs HHS green programming; (10) the HHS Green Team has regularly welcomed student groups from other schools at its monthly meetings as a way to share best practices; (11). Three Green Team members (the K-12 Science Director, one parent, and one student) will deliver a presentation about the HHS composting program at a conference sponsored by the MA Farm to School Project (Worcester, MA) in January 2015; (12). HHS Green Team member Janice McPhillips gave a presentation about the HHS compost program at the annual MassRecycles R3 conference in April 2014; and (12) the HHS Green Team became the first school group to join Sustainable South Shore, a regional environmental group, in October 2014, and will host that group's next meeting in January 2015.

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.

The annual "teach-in" in on environmental issues (held for each of the past six years) offers an excellent illustration of the extent to which HHS integrates core concepts across the curriculum. While a Science teacher demonstrates the energy savings delivered by the school's solar panels, a Spanish teacher discusses environmentalism in Latin America. A Family & Consumer Science teacher shows how to cook with leftovers, an Economics teacher leads a simulation about what happens when vital resources like the air and sea are owned in common. While a Latin teacher discusses how Ancient Rome confronted its environmental challenges, a U.S. History teacher shows how "Victory Gardens" made a profound difference during World War II (and could do so again today). Students visit the school library to tour an "Environmental Science Fair" organized by their peers. Award-winning documentary films like "Bag It," "The Eleventh Hour," "There Once Was an Island," "Sun Come Up," and "Truck Farm" are shown to large and appreciative audiences in the auditorium. Guest presenters from the Alliance for Climate Education (ACE) and Protect Our Winters (POW) inspire hundreds more. Students videotape and edit school-based environmental presentations that are broadcast town-wide by Hingham Educational Cable Channel (public access TV). More than 150 separate presentations take place throughout the day, moving every one of our 1131 students toward a deeper concern for the environment. In 2013, noted humanitarian, physician and Harvard professor, Dr. Stephanie Kayden, presented to a large portion of school on the impact of natural disasters on the developing world. In March 2014, renowned storyteller Jay O'Callahan delivered a performance (funded by a large grant from Aquarion Water Co.) of an award-winning story, "The Spirit of the Great Auk," that delivered a powerful environmental message. The real-life hero of that story, Dick Wheeler (the subject of a now-famous NOVA Episode, "Haunted Cry of a Long Gone Bird," that first aired on PBS in 1994) accompanied Mr. O'Callahan that day and chose HHS as the place to present O'Callahan with the "Great Auk Award." Mr. Wheeler spent the whole day at HHS, visiting Environmental Science and Oceanography classes. Before leaving that day, the man once described by Time magazine as a "Hero for the Planet" remarked, "You've got an amazing school here. Spending time with your teachers and students has made me a fan of Hingham High School!" We hope the Green Ribbon Schools selection panel will share that opinion!