



## District Nominee Presentation Form

### CERTIFICATIONS

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#### District's Certifications

The signatures of the district superintendent on the next page certify that each of the statements below concerning the district's eligibility and compliance with the following requirements is true and correct to the best of the superintendent's knowledge.

1. The district has been evaluated and selected from among districts 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.
2. The district is providing 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.
3. OCR has not issued a violation letter of findings to the school district concluding that the nominated school district 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.
4. The U.S. Department of Justice does not have a pending suit alleging that the school district has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
5. 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 school district in question; or if there are such findings, the state or school district has corrected, or agreed to correct, the findings.
6. The district 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 District 2015-2018

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Name of Superintendent: **Dr. William R. Hite, Jr.**

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

District Name: **The School District of Philadelphia**

(As it should appear on an award)

Address: **440 North Broad Street, Philadelphia, PA 19130**

Telephone: **215-400-4000** Fax: **215-400-4751**

Web site/URL: **www.philasd.org** E-mail: **Hite@philasd.org**

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

A handwritten signature in black ink, appearing to read "W. R. Hite, Jr.", written over a horizontal line.

Date: **12/2/16**

(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 district’s eligibility and compliance with the following requirements is true and correct to the best of the Authority’s knowledge.

- 1. The district 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 education.
- 2. The district 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: **Pennsylvania Department of Education**

Name of Nominating Authority: **Mr. Pedro Rivera**

(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: **1/20/17**

(Nominating Authority’s Signature)

**SUMMARY AND DOCUMENTATION OF NOMINEE’S ACHIEVEMENTS**

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

**SUBMISSION**

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

OMB Control Number: 1860-0509

Expiration Date: March 31, 2018

**Public Burden Statement**

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](mailto: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.



**PENNSYLVANIA GREEN RIBBON SCHOOL APPLICATION FORM**

**School Contact Information**

- School District Application
- School Application

**School Name (for building application):**

**Street Address:**

**City, State, Zip:**

**School Website:**

**School District (if applicable):** School District of Philadelphia

**Street Address:** 440 North Broad Street

**City, State, Zip:** Philadelphia, PA 19130

**District Website:** [www.philasd.org](http://www.philasd.org)

**Principal:**

**Principal Email:**

**Principal Phone:**

**Superintendent:** Dr. William R. Hite, Jr.

**Superintendent Email:** [hite@philasd.org](mailto:hite@philasd.org)

**Superintendent Phone:** [hite@philasd.org](mailto:hite@philasd.org)

**Lead Applicant Name:** Francine Locke

**Lead Applicant Email:** [flocke@philasd.org](mailto:flocke@philasd.org) **Lead Applicant Phone:** 215-400-5213

**School District AUN Number:** 1-26-515001

**School Building Number:**

**School Type:**  Public  Private/Independent  Charter  Magnet

**School Description:**  Urban  Suburban  Rural

**School Level:**  Elementary  Middle  High School

**Number of schools at each level and enrollment (for district application):**

150 Elementary

15 Middle

55 High School

143,387 Total Enrollment

**Disadvantaged Households Certification:**

Does your school/district serve 40 percent or more students from disadvantaged backgrounds?

(i.e., Students who are eligible for free and reduced-price school meals, students with disabilities, students who are limited English proficient, migrant, or receiving services under Title I of the Elementary and Secondary Education Act)

- Yes  No

**By checking all of the statements below, the school district superintendent certifies that each of these statements is true concerning the school district's eligibility and compliance with noted requirements:**

- The school district's configuration includes one or more buildings with Grades PK-12.
- The school district is not 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.
- OCR has not issued a violation letter of findings to the school district concluding that the 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.
- The U.S. Department of Justice does not have a pending suit alleging that the school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.

- 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 school district in question; or if there are such findings, the school district has corrected, or agreed to correct, the findings.
- The school district meets all applicable federal, state, local, and tribal health, environmental and safety requirements in law, regulations, and policy, and is willing to undergo an EPA on-site verification.

## SUMMARY NARRATIVE

**Provide a 1,500-word maximum narrative describing your school or district's efforts to reduce environmental impact and operating costs; improve student and staff health; and provide effective environmental and sustainability education. Focus on unique and innovative practices and partnerships. Use the bullets below as a guide to frame your narrative and include relevant information that the reviewers are looking for during their evaluation of your application. If your school or district is selected as a Green Ribbon School, this summary will be used in ED-GRS publications and publicity. Please ensure this narrative is comprehensive and addresses your strengths in all three pillars. Remember, this narrative is where you can make your program shine for all to read about your efforts and initiatives.**

- Is your school or district participating in a local, state or national school program, such as the U.S. Environmental Protection Agency's ENERGY STAR Portfolio Manager, Eco-Schools USA, Project Learning Tree GreenSchools! or others that ask you to benchmark progress in some fashion in any or all of the Pillars?
- Has your district, school, staff or student body received any awards for facilities, health or environment?
- Has your school or district sought or achieved Leadership in Energy and Environmental Design (LEED), Collaborative for High Performing Schools (CHPS), Green Globes or other green building standards? What certificate or level has your school obtained?
- Do you use the Federal High-Performance Sustainable Buildings Checklist in Portfolio Manager to assess the school building(s)?
- What efforts have you made to reduce environmental impact and costs?
- How have you improved student and staff health?
- How have you provided effective environmental and sustainability education?
- What are your unique and innovative practices and partnerships?

### Insert narrative here:

The School District of Philadelphia (School District) is a large historic urban public school system in Pennsylvania with 143,387 students, over 300 buildings and 25 million square feet of building space. The average school building's age is 70 years. Our students are diverse: Fifty-one percent of our students are African American and twenty percent are Latino. We also support twenty-four languages. The School District serves 92,500 free lunches daily and 57,500 free breakfasts daily. We serve nutritious foods that are more appealing than ever, with a focus on healthy hydration, farm to table, and fruit and vegetable of the month programs. The School District's purpose is to provide a great school in every neighborhood in Philadelphia, close to where children live with high quality operations and support services. The School District aims to make every Philadelphia public school a "green" school by 2020, and our superintendent, Dr. William Hite, Jr., committed to this in May of 2016 when our School District launched its first five-year sustainability plan called GreenFutures.

On May 16, 2016, GreenFutures, the School District of Philadelphia's sustainability plan, was officially launched by City of Philadelphia Mayor, Jim Kenney, and the District's Superintendent, Dr. William Hite, Jr., at Philadelphia City Hall Mayor's Reception Room. The plan aims to reduce energy consumption District-wide, increase waste diversion from landfills, increase school green spaces and create healthy indoor environments and healthy living habits. On June 28, 2016, in an effort to recognize the many community partners and School District staff who helped create GreenFutures, the Philadelphia Zoo hosted a reception at their Children's Zoo-U exhibit. The Mayor and Superintendent, as well as the US Environmental Protection Agency's Regional Administrator were present at the event. On August 18, 2016, the District's sustainability plan received the 2016 SustainPHL Award for Sustainable Communities category. This award was presented at WHYY studios. Another highlight of our District's sustainability efforts includes being a charter member of the Green Schools Alliance District Collaborative. Our District also is proud to have nineteen registered National Wildlife Federation Eco-Schools.

The design, construction and operation of green buildings is important to our School District. Leadership in Energy and Environmental Design (LEED) certifications were obtained for eight schools:

John Barry Elementary School – Gold (99,287 square feet)  
Bridesburg Elementary School Addition – Gold (71,275 sq ft)  
Kensington CAPA High School – Platinum (89,915 sq ft) [First platinum public high school in PA]  
High School of the Future – Gold (162,211 sq ft)  
Thurgood Marshall Elementary School – LEED for Existing Buildings (114,000 sq ft)  
West Philadelphia High School – Gold (170,013 sq ft)  
Frances Willard Elementary School – Silver (97,261 sq ft)

In 2011, the School District of Philadelphia received the US Green Building Council's Center for Green Schools' Best of Green Schools Award for committing to all new schools being certified LEED Silver and rolling out a plan to address the City of Philadelphia's existing schools. Also in 2011, the School District was awarded the US Environmental Protection Agency's Indoor Air Quality Great Start Award for establishing an indoor environmental quality program that was based upon the EPA's Tools for Schools criteria. As a major highlight, the School District of Philadelphia's Greenfield Elementary School was selected as a 2013 US Department of Education Green Ribbon School Award Winner.

Over the past five years, the School District has constructed large green stormwater infrastructure projects at thirty-one schools, including surface and subsurface infiltration basins, porous pavements, rain gardens, storage trenches, bioretention swales, green roofs and porous play surfaces. Our Capital Programs Office has committed to constructing a minimum of five major green stormwater infrastructure projects per year as per the District's sustainability plan. Green stormwater infrastructure at our schools manages stormwater runoff and provides educational opportunities and enhanced recreational amenities for our students and the surrounding community. Additionally, the District receives stormwater financial credits that reduce our utility costs for water supplied to schools.

To encourage student healthy hydration, during the summer of 2016, new bottle filling stations were announced as a standard for all Philadelphia public schools. The District invested \$1 Million to install a minimum of three hydration stations for every school. The hydration stations are filtered for lead, are chilled and also have a bottle filling counter to illustrate to students how many water bottles are saved from landfills by using the stations.

Sustainability-infused curriculum, professional development opportunities for teachers and operations staff, and the intentional shift in organizational culture towards sustainability is a priority for this School District. Through the GreenFutures sustainability plan, monthly Education for Sustainability (EfS) meetings take place with a committee of District curriculum specialists and environmental staff, as well as external partners to develop this work. So far, the "Understanding the Urban Watershed Curriculum Guide" has been added to the core curriculum thanks to a partnership between the Fairmount Water Works, Philadelphia Waters educational branch, and the District's Curriculum office. Since 2015, five professional development workshops have been provided to teachers by partners from the National Wildlife Federation's Eco-Schools USA, The Philadelphia Zoo, The Franklin Institute, Keep Philadelphia Beautiful and The Cloud Institute. Also, Asthma 101 training is being provided to teachers through the District's Asthma Management Program in partnership with the American Lung Association. Each of the sustainability professional development opportunities provided for teachers include Act 48 credits that may be used to maintain teacher licenses in Pennsylvania.

The many partnerships that the School District has acquired through the development of its sustainability plan are the reason why the plan exists and continues to grow. Through monthly committee meetings for education for sustainability, consumption and waste, energy and efficiencies, school greenscapes and healthy schools/healthy living, the School District is not only receiving guidance and expertise from partnerships, but we are also receiving in-kind donations and benefiting from the services that partners provide to our schools. This includes teacher school gardening workshops, school recycling outreach and support, composting cooperatives and even funding for projects such as creating an educational mini MRF (materials recycling facility) used to demonstrate how materials are sorted during recycling.

The School District of Philadelphia, as a community, from Superintendent to Chief Operating Office, to School Principal and Facilities Staff, understands that green and healthy schools are where children learn best. Through the development and implementation of a five-year sustainability plan, our School District is measuring progress through specific targets and actions. Stakeholders are involved and District staff are committed to the process. Our District is making every public school in Philadelphia green and healthy because that is where children learn best, and our communities and stakeholders are counting on it. In an annual report, the District will communicate the status of metrics that are outlined in the plan. Both challenges and successes will be highlighted annually in the progress report, as well as model programs that our schools can use to emulate as best practices for creating school gardens, energy conservation and behavior programs, recycling and education for sustainability initiatives.

## **PILLAR ONE: REDUCED ENVIRONMENTAL IMPACT**

### **Element 1A: Energy Conservation and Efficiency**

***Provide a 1,500-word maximum narrative of how your school or district has promoted energy conservation and improved energy efficiency, as well as reduced greenhouse gas emissions. Below are guiding questions to help frame your narrative.***

- Have you received the U.S. Environmental Protection Agency's ENERGY STAR certification? If so, in what year was the certification earned?

- Are you currently tracking your school or district's energy use in a tool such as ENERGY STAR Portfolio Manager? If so, what tool and for how long?
- Do you have an energy management plan in place at your school or district?
- How has the school/district reduced its total non-transportation energy use (i.e., electricity, lighting and heating/cooling) from an initial baseline?
- Provide your percentage reduction measurement unit used (kBtu/sf, kBtu/student, or annual therms). Include time period, and how documented.
- Are there any student-led energy saving campaigns in place?
- Is a purchasing and procurement policy for energy efficient products in place?
- Are there occupancy sensors or daylight harvesting controls in the building(s)?
- What percentage of your energy consumption comes from on-site renewable energy (solar, wind, biomass, etc.) generation or purchased renewable energy?
- Can your school or district demonstrate a reduction in greenhouse gas emissions? What is the percentage of reduction and the time period of reduction? How is it documented?

**Insert Narrative Here:**

The School District of Philadelphia has a target in its 2016 sustainability plan of reducing energy consumption Districtwide by twenty percent over five years. The District currently tracks its energy use through EnergyCAP and EnergySTAR, with data dating back to 2010. The School District measures the reduction of energy consumption in KBTU (thousand British Thermal Units). Fiscal Year 2011 versus Fiscal Year 2016 showed a forty percent reduction in consumption, from 2,700,968,017 KBTU in 2010, to 1,616,598,564 KBTU in 2016, documented using EnergyCAP. The School District can also demonstrate a reduction in greenhouse gas emissions. In Fiscal Year 2011 versus Fiscal Year 2016, there was a thirty-six percent reduction in carbon dioxide emissions (CO<sub>2</sub>E), from 232,786 Metric Tons of CO<sub>2</sub>E in Fiscal Year 2011, to 148,399 Metric Tons of CO<sub>2</sub>E in Fiscal Year 2016, documented using EnergyCAP. The District is reducing its energy consumption through response demand programs, energy savings facility upgrades and through building occupant behavioral changes. Also, the District is conducting natural gas conversions annually to eliminate heating oil as the primary source of heat at schools. Further, the District is about to embark on a pilot project using energy performance contracting for guaranteed energy savings. The project will include a comprehensive measurement and verification plan to ensure that the District will receive the maximum in facility upgrades for the energy savings and that the energy savings are real and verifiable.

As an example of demand response initiatives, in the summer of 2015, the District reduced its energy capacity tag by voluntarily reducing electricity demand during the likelihood of one of five peak days that would determine the capacity baseline for the following planning year. A notification was sent to the District ten times in the summer of 2015, and the District successfully participated in four of the five eventual peak days. Because of this, the District's capacity tag was reduced by 45.7 MW to 36.3 MW, a twenty percent decrease, resulting in \$1.2 Million in financial savings in Fiscal Year 2017. Since the District's capacity tag was reduced dramatically during the summer of 2015, a new goal of matching the prior year's performance was set by the District. The performance number for the summer of 2016 showed that the District reduced from 36.3MW to 32.8MW. This translates into \$401,000 additional future savings in Fiscal Year 2018.

As an example of building occupant behavioral change initiatives, on July 29, 2015, the School District's Procurement Department advertised a request for proposal (RFP), RFP 470, for a professional services consultant to develop and implement a Student Driven Energy Education Program. An RFP review committee selected the firm Practical Energy Solutions based upon an administrative and technical review of the written proposals, and an oral presentation by both firms. The School Reform Commission approved the contract with Practical Energy Solution in November 2016, and a \$100,000 per year budget for the program.

The tasks that the consultant will be contracted to perform at all 218 schools over five years include:

- Conducting an initial review of energy performance at School District facilities using data provided by the District and assembling the data for use in the education program;
- Developing a comprehensive student driven energy education program with a curriculum component that includes at least the following components that were vetted through and approved by the School District's Curriculum Office:
  - Promoting behavior changes among students and staff
  - Instructing students on the basics of auditing spaces
  - Allowing students to assist in the verification of "use detail information" (e.g. number of classrooms or computers) for use in USEPA Energy Star Portfolio Manager tool
- Empowering students to identify and follow through with operational changes within their schools with support from appropriate District facilities staff.
- Providing, at a minimum, one toolkit per school that includes at least the following: Light Meter; Infrared Gun; Flicker Meter; Watt Meter; Plug Strip; and Light Bulb Socket.

- Providing a strategy for implementing the aforementioned curriculum as student-driven energy education program directly, or; by training the District's staff to lead the effort on behalf of each school.
- Identifying a detailed strategy for operating and sustaining the program beyond the lifetime of this contract through grants, partnerships, etc.
- Indicating the number of schools that will be included in the proposed program the first year, and each subsequent year, based on a budget including consultant fee and all related expenses, incentives, etc.
- Providing options for non-monetary based incentives for schools participating in the program.

The contract with Practical Energy Solutions will fulfill a key goal of the School District's GreenFutures sustainability plan: to implement an energy education and conservation program at all district schools with the goal of educating students and staff about energy conservation and contributing towards the goal of reducing energy consumption at schools by twenty percent. Practical Energy Solutions will introduce their program to twenty-one target schools the first year, and expand over the next four years to cover all schools.

The initial twenty-one schools were selected based upon the following criteria: (1) Potential for high energy and fiscal savings due to facility size (square footage), number of occupants and the types of HVAC and electrical systems. Schools that are scheduled for an upcoming Capital Improvement Project (HVAC or electrical upgrades) were not considered for the initial group of schools as this would affect the data and not allow students to appreciate the program based upon their behavioral modifications; and, (2) School principals' and staff's willingness to participate and/or interested in the program. Over five years, all 218 schools will be included in the program.

Specific services and supplies to be provided include on-site training, curricular materials, a web-based management tool for monitoring and communication, and an energy monitoring toolkit for each school. In addition, although the first year of the program is funded by the School District, the vendor agrees to work with the School District to locate and obtain grants that will fund the program each year.

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

***Provide a 500-word maximum narrative of how your school or district is progressing toward water conservation. Below are guiding questions to help frame your narrative.***

- Do your facilities have low flow fixtures (e.g., faucets, toilets, sinks)?
- Can the school/district demonstrate a reduction in total water consumption intensity (measured in gallons/square foot or gallons/occupant) from an initial baseline?
- Do you conduct audits of facilities and irrigation systems to make sure they are free of significant water leaks and to identify opportunities for savings?
- Do all outdoor landscapes consist of water-efficient or regionally appropriate plants (native species and/or adapted species)?
- Does your school use a smart irrigation system that adjusts watering time based on weather conditions?
- Has your school or district implemented storm water best management practices and/or low-impact development strategies (i.e., rain gardens, vegetated swales, pervious paving, rainwater harvesting, green roofs)?
- Does your school or district use non-potable water sources, such as rainwater or greywater (i.e., water from sinks or kitchens), for irrigation or toilet flushing?
- If you use drinking water from a well, how is the water source protected from potential contaminants?
- Do you have a program in place to control lead in drinking water, including voluntary testing and measures to reduce lead exposure in drinking water)?
- Are all taps, faucets and fountains used for drinking and cooking cleaned on a regular basis to reduce possible bacterial and other contamination? Are faucet screens and aerators regularly cleaned to remove particulate lead deposits?
- Is an area of the school/district grounds devoted to ecologically or socially beneficial uses, including those that give consideration to native wildlife (such as school vegetable garden, wildlife or native wildlife habitat, outdoor classroom, running/walking trails, environmental restoration project, etc.)?
- Describe other ways you are working to improve water quality, efficiency and conservation.

**Insert Narrative Here:**

The School District of Philadelphia has a target in its 2016 sustainability plan of reducing energy consumption Districtwide by twenty percent over five years. The District currently tracks its energy use through EnergyCAP and EnergySTAR, with data dating back to 2010. The School District measures the reduction of energy consumption in KBTU (thousand British Thermal Units). Fiscal Year 2011 versus Fiscal Year 2016 showed a forty percent reduction in consumption, from 2,700,968,017 KBTU in 2010, to 1,616,598,564 KBTU in 2016, documented using EnergyCAP. The School District can also demonstrate a reduction in greenhouse gas emissions. In Fiscal

Year 2011 versus Fiscal Year 2016, there was a thirty-six percent reduction in carbon dioxide emissions (CO<sub>2</sub>E), from 232,786 Metric Tons of CO<sub>2</sub>E in Fiscal Year 2011, to 148,399 Metric Tons of CO<sub>2</sub>E in Fiscal Year 2016, documented using EnergyCAP. The District is reducing its energy consumption through response demand programs, energy savings facility upgrades and through building occupant behavioral changes. Also, the District is conducting natural gas conversions annually to eliminate heating oil as the primary source of heat at schools. Further, the District is about to embark on a pilot project using energy performance contracting for guaranteed energy savings. The project will include a comprehensive measurement and verification plan to ensure that the District will receive the maximum in facility upgrades for the energy savings and that the energy savings are real and verifiable.

As an example of demand response initiatives, in the summer of 2015, the District reduced its energy capacity tag by voluntarily reducing electricity demand during the likelihood of one of five peak days that would determine the capacity baseline for the following planning year. A notification was sent to the District ten times in the summer of 2015, and the District successfully participated in four of the five eventual peak days. Because of this, the District's capacity tag was reduced by 45.7 MW to 36.3 MW, a twenty percent decrease, resulting in \$1.2 Million in financial savings in Fiscal Year 2017. Since the District's capacity tag was reduced dramatically during the summer of 2015, a new goal of matching the prior year's performance was set by the District. The performance number for the summer of 2016 showed that the District reduced from 36.3MW to 32.8MW. This translates into \$401,000 additional future savings in Fiscal Year 2018.

As an example of building occupant behavioral change initiatives, on July 29, 2015, the School District's Procurement Department advertised a request for proposal (RFP), RFP 470, for a professional services consultant to develop and implement a Student Driven Energy Education Program. An RFP review committee selected the firm Practical Energy Solutions based upon an administrative and technical review of the written proposals, and an oral presentation by both firms. The School Reform Commission approved the contract with Practical Energy Solution in November 2016, and a \$100,000 per year budget for the program.

The tasks that the consultant will be contracted to perform at all 218 schools over five years include:

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- Developing a comprehensive student driven energy education program with a curriculum component that includes at least the following components that were vetted through and approved by the School District's Curriculum Office:
- Promoting behavior changes among students and staff
- Instructing students on the basics of auditing spaces
- Allowing students to assist in the verification of "use detail information" (e.g. number of classrooms or computers) for use in USEPA Energy Star Portfolio Manager tool
- Empowering students to identify and follow through with operational changes within their schools with support from appropriate District facilities staff.
- Providing, at a minimum, one toolkit per school that includes at least the following: Light Meter; Infrared Gun; Flicker Meter; Watt Meter; Plug Strip; and Light Bulb Socket.
- Providing a strategy for implementing the aforementioned curriculum as student-driven energy education program directly, or; by training the District's staff to lead the effort on behalf of each school.
- Identifying a detailed strategy for operating and sustaining the program beyond the lifetime of this contract through grants, partnerships, etc.
- Indicating the number of schools that will be included in the proposed program the first year, and each subsequent year, based on a budget including consultant fee and all related expenses, incentives, etc.
- Providing options for non-monetary based incentives for schools participating in the program.

The contract with Practical Energy Solutions will fulfill a key goal of the School District's GreenFutures sustainability plan: to implement an energy education and conservation program at all district schools with the goal of educating students and staff about energy conservation and contributing towards the goal of reducing energy consumption at schools by twenty percent. Practical Energy Solutions will introduce their program to twenty-one target schools the first year, and expand over the next four years to cover all schools.

The initial twenty-one schools were selected based upon the following criteria: (1) Potential for high energy and fiscal savings due to facility size (square footage), number of occupants and the types of HVAC and electrical systems. Schools that are scheduled for an upcoming Capital Improvement Project (HVAC or electrical upgrades) were not considered for the initial group of schools as this would affect the data and not allow students to appreciate the program based upon their behavioral modifications; and, (2) School principals' and staff's willingness to participate and/or interested in the program. Over five years, all 218 schools will be included in the program.

Specific services and supplies to be provided include on-site training, curricular materials, a web-based management tool for monitoring and communication, and an energy monitoring toolkit for each school. In addition, although the first year of the program is funded by the School District, the vendor agrees to work with the School District to locate and obtain grants that will fund the program each year.

## **Element 1C: Reduced waste production, improved recycling, and composting programs**

*Provide a 500-word maximum narrative of how your school or district diverts solid waste from landfills and incinerators by reusing, recycling, and/or composting. Include a description of how you dispose of hazardous waste. Below are guiding questions to help frame your narrative.*

### **Municipal Solid Waste**

- What percentage of waste is diverted from the landfill or incinerator by reuse, composting and/or recycling?
- Does your school or district have a yard and/or food waste composting system?
- Are you using post-consumer recycled products or wood products certified by the Forest Stewardship Council, Sustainable Forestry Initiative, American Tree Farm System or other certification standard when possible?
- Are procurement policies in place to encourage the purchase of recycled content materials, supplies or furniture?
- Are other waste reduction programs in place?

### **Hazardous waste**

- How much hazardous waste do you generate (pounds/person/year)? How is it disposed?
- Is there a hazardous waste policy in place and actively enforced for storage, management and disposal of chemicals, and hazardous waste in laboratories and other areas?
- What percentage of total computer purchases are Electronic Product Environmental Assessment Tool (EPEAT) certified products? How do you dispose of unwanted computer and other electronic products?
- Do you use certified "green" cleaning products that meet the environmental standards of established eco-label programs (e.g., Green Seal, Ecologo, etc.)?
- Is your custodial program certified by the Green Seal Standard for Commercial and Institutional Cleaning Services (GS-42), the ISSA Cleaning Industry Management Standard – Green Building, or an equivalent standard?
- Has your school or district participated in PADEP School Chemical Cleanout Campaign (SC3)?
- What other indicators show that you are reducing waste and eliminating hazardous waste?

### **Insert Narrative Here:**

The School District's sustainability plan goal for consumption and waste is that every student will have access to a school that incorporates waste reduction practices and diverts waste from landfills. The plan has a District-wide target that calls for a ten percent increase in waste diversion from landfills within five years. To do this, the District has implemented a comprehensive recycling program at forty-two schools and plans to implement full recycling programs at every school within five years. Presently, all schools recycle cardboard. The City of Philadelphia collects this at curbside weekly. The first pilot of schools with comprehensive recycling programs is showing significant progress in waste diversion, with a thirty percent diversion rate being measured at some schools. Also, one school has successfully implemented a model composting program that serves the Philadelphia community in addition to its own school community.

In regards to a comprehensive recycling program, the District's waste management contractor measures the waste diversion rate for every school in the program. A waste characterization audit conducted in 2014 revealed that twenty percent of school waste was from milk and juice cartons. This was an important finding, as the District's waste hauler at the time did not recycle milk cartons. After partnering with the Carton Council, the waste hauler found the resources to build a recycling center that allowed for the recycling of milk cartons. Partners such as Keep Philadelphia Beautiful, Recyclebank and the City of Philadelphia's Sanitation Department have provided significant support in the form of outreach materials, visits to schools for presentations about recycling and providing grants that help with educating students about recycling at school and at home. Recyclebank has a contract with the City of Philadelphia to increase recycling rates through a residential rewards program. Every year Recyclebank has the Green Schools Program where schools can submit an application for an environmental project proposal with a budget up to \$2,500. Recyclebank selects the top proposals and posts them to their site, where Recyclebank members can donate their points online. They award \$1 for every 250 points donated. In 2016, the School District had ten winners that raised a total of nearly \$20,000. These projects included school gardens to grow organic, healthy food & reduce stormwater runoff as well as a "Recycling Road Show" where students will build a portable interactive mini materials recovery facility or MRF that will be available on loan for classroom demonstrations.

One of our schools has a large scale model composting program. WB Saul High School for Agricultural Sciences has a community supported agriculture farm that serves as an outdoor classroom and land lab. Saul High School partners with a community partner, Weavers Way Co-op. The co-op recently stopped paying a composting company to take away its bruised apples, broccoli stems, old

produce, used coffee grounds and carrot peelings and started storing them outside in 70-pound trash cans. Weavers Way transports them to Saul High School where they mix the material with manure and set windrows, or long rows where compost sits to break down, for six-to-eight weeks. Weavers Way bought a tractor large enough to till large compost piles. After the compost is done and ready, which takes several weeks depending on weather, students from Saul High School bag three gallons worth of compost to be sold. Prior to selling the compost, the co-op and high school were using the material on their own crops. When the bags started being sold, the money was split 50/50 between Saul High School and Weavers Way. Philadelphia residents can also contribute to the compost by having kitchen waste picked up from their homes.

Students from Saul High School are now mentoring Fox Chase Elementary School students. Fox Chase is moving towards to becoming a complete agriculturally based elementary school. This redesign is student driven by the interest and enthusiasm to learn more about plants, animals and careers found in agriculture; is teacher supported through in-class curriculum changes, with the support of industry representatives through in-class visits and trips to the Fox Chase Farm where teachers are exposing students to the fundamentals in agriculture; is School District supported through a grant awarded to the school to change the structure of the school to become agriculturally based; and is supported by the parents and community to move towards being an agriculturally centered school. The 4th grade class helped to install a 50'x50' butterfly garden, where they plan to continue plantings to attract butterflies, and establish a Monarch Watch Station. This is just one example of how agriculture reaches all learners through hands-on experiences. The hands-on experiences are components of developing a life-long learner and career directed student. The focal points or themes will be structured around horticulture, animal science, food science, and technology. Fox Chase Elementary School has partnered with the Fox Chase Farm, a Philadelphia School District demonstration farm, to assist in implementing the agricultural curriculum into the classrooms and provide farm visits. The hands-on learning component provides the structure to meet the needs of all learners. The redesign of the school not only brings in the agricultural content, such as horticulture, but it also provides the opportunity for the students to show their acquired knowledge through S.T.E.M. (Science Technology Engineering Math) project-based assessments. It is with great anticipation that the redesign of the school will not only generate interest in agriculture, but provide the educational opportunities that will shape and develop individuals that understand firsthand the importance of agriculture in their everyday life.

In regards to hazardous waste management, the School District is considered a Conditionally Exempt Small Quantity Generator of hazardous waste. The types of waste that the School District generates is primarily fluorescent light tubes, ballasts, petroleum products and batteries. The School District has a large scale universal waste management program. Annual pick-ups of universal waste are conducted at every school, and in some cases, more than once a year if a project at a school results in an increase in universal waste. The handling, lab packing, transport and disposal of these materials are conducted by specialized hazardous waste material management contractors and the District has an annual budget of approximately \$1 Million for this work. In 2015, the School District properly disposed of and recycled when possible 32,074 mercury containing bulbs (equates to 126,933.5 feet), 1.54 pounds of Mercury, and 35.95 pounds of polychlorinated biphenyls.

To properly manage hazardous waste, the School District participates in the PA Department of Environmental Protection's School Chemical Cleanout Campaign (SC3). The School District's chemical management program includes inventorying and proper storage and disposal support services for school laboratories. The District has inspected every chemical closet in high schools to identify if materials are properly stored based upon the criteria of compatibility of chemical properties, proper labeling, removal of poorly packaged and outdated, unknown or unapproved chemicals in schools. The District has a written chemical management plan that provides information about how teachers should properly store and dispose of laboratory chemicals. The School District also was awarded a grant in 2016 through the EPA to produce six short (1-5 minute) educational videos, targeted to several key constituencies within schools, regarding school safety planning and implementation: chemical management policy and appropriate interventions. The targeted constituents include, School Operations, Environmental Services, Facilities Management, Building Engineers and Cleaning Staff, School Principals, and Educators, including Teachers of Science (e.g. Chemistry Laboratories), Career & Technical Education programs (e.g. Photography, Welding, etc.), and Art Studios (painting, sculpture, etching, etc.).

The videos will be used to:

- Facilitate Communication;
- Stimulate needs assessment; and,
- Foster development of future funding for delivery of technical assistance and services.

A local small audio-visual firm is working closely with the School District's Office of Environmental Management & Services for Pennsylvania Intermediate Unit-26 (Philadelphia County) to ensure correct procedures are communicated.

The School District uses certified Green Seal cleaning products (Diversey), with a \$2 Million budget for its Green Cleaning Program. These are low volatile-organic compound (VOC) generating products that are considered asthmafriendly and environmentally-safe. Green cleaning training is also provided by the vendor for facilities staff.

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

**Provide a 500-word maximum narrative of how your school or district is promoting alternative transportation, utilizing alternative fuels, and/or upgrading current modes of transportation. Below are guiding questions to help frame your narrative.**

- What percentage of students walk, bike, bus or carpool (i.e., two or more students in the car) to/from school?
- Do you have a no-idling policy on file and signs posted stating that all vehicles, including school buses, are to limit idling on school/district premises?
- Are all vehicle loading and unloading areas at least 25 feet away from all buildings' air intakes (including doors and windows)?
- Describe how your school/district transportation fleet reduces environmental impacts (e.g. percentage of electric/hybrid/alternative fuel vehicles, idle reduction equipment, bus route revised to reduce fuel usage/emissions).
- Have you participated in PennDOT's Safe Routes to School program?

### Insert Narrative Here:

The School District's GreenFutures, "Healthy Schools, Healthy Living," Committee meets monthly and includes representatives from "Get Healthy Philly," the Philadelphia Bicycle Coalition and the Mayor's Office of Transportation. This committee's aim is to promote active transport to and from school for students and staff. The School District's sustainability plan calls for the following actions to actualize this effort: To determine a method for tracking the number of students who currently walk/bike to school and set a target for improvement (target completion date 2017); To develop a means to determine which schools are interested in bike racks (target completion date 2017); To identify and connect common goals and initiatives for the Philadelphia "Safe Route to School" program, the Water Department's "Green Streets" program and the District's "GreenFutures" program (target completion date 2018); To analyze walkability audit data currently available and to identify funding sources to implement audit recommendations (target completion date 2018); To set priorities for improving infrastructure to and from schools to make active transportation more appealing to students (target completion date 2018); To create initiatives that help children dress appropriately to be seen (e.g., reflectors, coats, cool helmets, etc.) while walking or biking to schools (target completion date 2018); and, To develop a plan to assess and increase the number of students who walk/bike to school (target completion date 2018). Progress on each of these actions will be reported out annually in the District's GreenFutures Progress Report, scheduled for June of every year.

## PILLAR TWO: POSITIVE IMPACT ON STUDENT AND STAFF HEALTH

### Element 2A: Integrated school/district environmental health program

**Provide a 1,500-word maximum narrative of how your school or district is improving the quality of health for students and staff. Keep in mind that an integrated school/district environmental health program is based on an operations and facility-wide environmental management system that considers student and staff health and safety in all practices related to design, construction, renovation, operations and maintenance of schools and grounds. Below are guiding questions to help frame your narrative.**

#### Integrated Pest Management

- Do you have an integrated pest management plan in effect to reduce or eliminate pesticides?
- Do you follow posting guidelines regarding the application of pesticides and herbicides? Do you notify parents and school employees about methods of application?
- Do you maintain annual summaries of pesticide applications, copies of pesticide labels, copies of notices and Material Safety Data Sheets (MSDSs) in an accessible location?
- Do you prohibit children from entering a treated area for at least eight hours following the application (or longer if required by the pesticide label)?

#### Ventilation

- Does your school/district meet ASHRAE Standard 62.1-2010 (Ventilation for Acceptable Indoor Air Quality)?
- Are local exhaust systems (including dust collection systems, paint booths and/or fume hoods) installed at all major airborne contaminant sources, including science labs, copy/printing facilities and chemical storage rooms?
- Have you installed energy recovery ventilation systems, where feasible, to bring in fresh air while recovering the heating or cooling from the conditioned air?

#### Contaminant Controls

- Radon: Have all ground-contact classrooms been tested for radon within the past 24 months?

- Carbon Monoxide: If you have combustion appliances, do you have an inventory of all combustion appliances and annually inspect these appliances?
- Mercury: Has your school or district eliminated mercury containing thermometers, elemental mercury, chemical compounds, art chemicals, etc.?
- Do you recycle or dispose of unwanted laboratory chemicals, mercury thermometers, gauges and other devices in accordance with federal, state and local environmental regulations?
- Chromated Copper Arsenate: Have you replaced or sealed wooden decks, stairs, playground equipment or other structures treated with Chromated Copper Arsenate within the past 12 months? What percentage?
- Secondhand Tobacco Smoke: Do you prohibit smoking on campus?
- Asthma Control: Do you have an asthma management program in place consistent with the National Asthma Education and Prevention Program's (NAEPP) Asthma Friendly Schools Guidelines?
- Indoor Air Quality (IAQ): Do you have a comprehensive indoor air quality management program consistent with EPA's Tools for Schools?
- Moisture Control: Are all structures visually inspected on a regular basis to ensure they are free of mold, moisture and water leakage?
- Describe any other measures regarding the school or district's built and natural environment that you take to protect student and staff health.

**Insert Narrative Here:**

The School District of Philadelphia (School District) is committed to providing students and staff with well resourced, safe, healthy, clean and comfortable learning and working environments. To support this commitment, the School District has developed an Indoor Environmental Quality (IEQ) Program. This program is administered by the School District's Office of Environmental Management & Services (OEMS). OEMS is responsible for identifying, correcting and preventing IEQ issues such as asthma triggers and the criteria set forth in the EPA's IAQ Tools for Schools program including pests, dampness and mold, point sources of dust and chemicals and ventilation. Through the District's IEQ program, IEQ screening inspections are conducted two times per year in tandem with other regulatory required inspections, also, by conducting planned comprehensive proactive inspections, and by conducting reactive or complaint driven inspections. IEQ issues are resolved through an IEQ Dashboard process. The District also has an Asthma Management Program that focuses on student health and environmental asthma trigger management. This program is comprised of a two pronged approach of clinical management of student health at school, and environmental management of asthma triggers in schools. The District's GreenFutures sustainability plan, "Healthy Schools, Healthy Living," section calls for the District to: "Provide every school with their facility's Indoor IEQ Dashboard over 5 years," and to "Develop a healthy school building indicators rubric with metrics in 2016." The School District also has established an Integrated Pest Management program that addresses pests including bed bugs using a pesticide-free approach for most pests. In some cases, a food services, school custodial staff, teachers and environmental services staff coordinated effort is needed to resolve pest issues. We recently completed a door-sweep inspection and installation project as per the guidance of partners from the Pennsylvania Integrated Pest Management Program at Pennsylvania State University. Almost 1,000 door sweeps were installed to the exterior doors of our schools to prevent pests from entering buildings. This step allows for an asthma trigger (rodents and other pests) to be reduced in our schools.

Asthma-focused proactive inspections are conducted in high asthma prevalent schools. These are defined as schools with a high (>20%) percentage of students who use their emergency asthma medication while at school in comparison to the overall school population.

The goals of the District's IEQ program are to:

- Identify and prevent IEQ issues in schools.
- Maintain healthy school indoor environments that are conducive to teaching and learning.
- Evaluate IEQ concerns and implement corrective actions in a comprehensive and timely fashion.
- Use an IEQ reporting mechanism so that issues are tracked to completion.
- Provide building occupants and District staff with tools, training and resources to prevent, identify and solve IEQ problems at the school-based level as much as possible.

An Industrial Hygienist conducts both proactive and reactive IEQ assessments. The Industrial Hygienist communicates with facilities staff, school principal and teachers while on site during assessments. A detailed and point by point report with a photo log of environmental conditions is developed from the assessment. This is called the IEQ Dashboard Report. The report's findings are categorized into the US EPA's Tools for Schools indicators of Mold/Dampness, Ventilation, General Cleanliness, Point Source and Pest Management. Corrective actions range from emergency response procedures after water intrusion, smoke infiltration, oil spills and other odorous releases, to specifications for mold remediation, decluttering and removing air fresheners and other point sources from classrooms. IEQ corrective actions are entered into the District's facilities management work order system and assigned to responsible

parties. OEMS works with responsible parties to track corrective actions to completion. For IEQ issues that are multifaceted and involve a number of responsible parties, a school based IEQ Team is formed to discuss and track IEQ Dashboard corrective actions to completion. The IEQ team's core members may consist of Maintenance staff, Operations staff, OEMS, Capital Programs, Food Services, Integrated Pest Management (IPM), School Principals, and other District departments depending upon the situation.

In addition to comprehensive IEQ inspections conducted by an Industrial Hygienist, IEQ screenings are included in US EPA mandated Asbestos Hazard Emergency Response Act (AHERA) inspections. Because AHERA inspections are required by law, and conducted twice per year at every school, the District incorporates inspection parameters for visible mold, rodent droppings and paint/plaster dust and deterioration. These observations are reported by AHERA inspectors in addition to their mandated purpose of reporting asbestos damage. As a result of this screening program, dozens of instances of active water leaks, mold and other issues have been identified and corrected. For larger, more costly facility repairs, the District's Capital improvement plan for the next five years is taking into consideration data collected by OEMS. This includes active roofing leaks, paint and plaster damage from chronic water intrusion and a multitude of other building envelope and ventilation issues. With this data, the District is incorporating IEQ issues that impact health into funding for long term fixes.

An IEQ Dashboard Report is generated for every reactive and comprehensive inspection, with findings that need to be corrected. The report contains very specific details about the location of, quantity of and type of IEQ deficiencies. The report is used as a reporting and tracking tool for corrective action implementation. IEQ Dashboard corrective actions are added to the District's Maintenance Work Order System. This allows for the proper assignment and tracking to completion. IEQ related Work Orders receive a priority ranking to ensure that the work is completed in a timely fashion. Mold, asbestos and lead based paint remediation work is handled through a Design Data Collection (DDC) packet process which is described on the next page. This process expedites abatement tasks to within 24 to 48 hours, and requires an assessment to determine if there is a need to relocate building occupants until the work is completed. A Design Data Collection (DDC) packet is completed by the District's Industrial Hygienist for IEQ inspections that result in the need for abatement or remediation, such as mold, asbestos and lead based paint. DDCs define the location, type of and quantity of materials to be abated or remediated, as well as the source or cause of the concern, e.g., roof leak. A photo log is also important to the packet. Recommended abatement and remediation means and methods are also included.

The District measures the performance of the IEQ Program primarily based upon the completion rate of corrective actions. Eighty three percent (83%), or over 6,200 IEQ corrective actions, have been implemented since 2010. In 2015, the District conducted IEQ evaluations at 101 schools and provided over 1,700 IEQ corrective actions. Approximately, 80% of the 1,700 actions (over 1,300) were implemented. As the District moves forward with the IEQ program, further work and initiatives are underway to attain the goal of reduced asthma triggers in classrooms. This includes initiatives such as door sweep inspections to identify penetrations around doors and entrances that allow for pest entry; classroom decluttering campaigns; and, training for building, administrative and instructional staff about asthma triggers and how to remove them. Over time, the District will continue to become more strategic and data driven so as to illustrate the health and environmental outcomes of the program.

The District has partnered with the US Centers for Disease Control and Prevention, National Institute of Occupational Safety and Health (NIOSH), and the Philadelphia Federation of Teachers Union, to pilot a proactive Dampness and Mold Assessment Tool (DMAT). Since 2011, the District has provided feedback to NIOSH about the usefulness of the DMAT in proactively finding mold and dampness in schools, and how to refine the tool to make it more useful and easier to use by other school districts. During this process, the SDP has trained nine inspectors on how to conduct the DMAT assessments. The District has incorporated a refined version of the DMAT assessment criteria into the biannual AHERA inspections and developed an easy to use scope of work for remediation tool that gives an immediate report to the Maintenance Division when mold or water leaks are identified. This allows OEMS to communicate "fixes" when mold findings occur.

In addition to the DMAT pilot program, the District and the Philadelphia Federation of Teachers Union have also joined NIOSH in a public health research project involving health and environmental at fifty elementary schools during the Spring of 2015. This was a very comprehensive study that involved onsite environmental surveys and internet based health surveys that teachers and other school staff completed. Environmental dust samples were collected in a group of schools for microbiological analysis and other environmental measures were collected for ventilation. NIOSH investigated associations between environmental and health conditions and investigated associations between objective microbial measurements from environmental sampling and dampness/mold scores from the DMAT data. A major goal was to use the information collected to assist schools nationally to understand how building related symptoms in occupants might be associated with environmental problems in buildings, which will help to motivate appropriate remediation and maintenance.

## **Element 2B: High standards of nutrition, fitness and outdoor time**

***Provide an 800-word maximum narrative of how your school or district is improving the physical and mental health of students and staff. Below are guiding questions to help frame your narrative.***

### **Fitness and Outdoor Time**

- What is the average amount of time over the past year that each student engaged in school-supervised physical education and/or outdoor time per week?

- Do you have outside classrooms or learning labs available?
- Describe any other outdoor exercise opportunities and nature-based recreation available to students.

#### **Food**

- Do you participate in USDA's Healthier School Challenge program or another nutrition recognition program?
- What percentage of food purchased is certified as environmentally preferable (e.g., Organic, Fair Trade, Food Alliance, Rainforest Alliance, etc.)?
- What percentage of food purchased is grown and processed locally, including food grown on school grounds?
- Does the school/district have an onsite garden in which the students participate?

#### **Ultraviolet (UV) Safety**

- Does your current student body participate in EPA's Sunwise Program or an equivalent program? What percentage of the student body participates?

#### **Mental Health**

- Does your school use a Coordinated School Health (CSH) approach or other related initiatives to address overall school health issues?
- Does your school partner with any postsecondary institutions, businesses, nonprofit organizations, or community groups to support student health and/or safety?
- Describe your school's efforts to support student mental health and school climate (e.g. anti-bullying programs, peer counseling, etc.).

#### **Insert Narrative Here:**

The School District of Philadelphia's (School District) Office of Health, Safety and Physical Education implements programs and activities that improve the health and well being of all students through teacher training, curriculum, instruction, resource attainment and assessment practices. The School District offers a variety of programs and also has a formally approved Wellness Policy as authorized by the School Reform Commission (SRC). The policy commits to providing a school environment that promotes student and staff wellness and supports students in their efforts to become fit, healthy and ready to learn. Through implementation of this policy, students become more knowledgeable and skilled in making behavior choices that support optimum health. The SRC adopted the Wellness Policy based on the recommendations of the Central Level School Wellness Council and in accordance with federal and state laws. The policy is included in the District's Strategic Plan.

The Wellness Policy establishes the following:

1. Coordinated School Wellness Councils – development of a Coordinated School Wellness Council at each school, using the Centers for Disease Control (CDC) Coordinated School Health Program Model as a template for wellness council development.
2. Nutrition standards for all foods available on school property during the school day – district schools shall establish standards to address all foods and beverages sold or served to students, including those available outside of reimbursable school meal programs.
3. Nutrition education – all students shall receive nutrition education that is interactive and teaches the skills they need to adopt healthy behaviors. Nutrition education will be provided within or in addition to the sequential, comprehensive, standards-based health education program.
4. Physical education – all students will have access to a sequential, comprehensive, standards-based physical education program taught by a certified health and physical education teacher.
5. Physical activity – opportunities shall be provided for every student to develop the knowledge and skills for specific physical activities, maintain physical fitness, regularly participate in physical activity, and understand the short and long-term benefits of a physically active and healthful lifestyle.
6. Other school-based activities – a healthy school environment shall be promoted and maintained that provides consistent wellness messages and is conducive to overall health for students, staff and the school environment.

One of our most successful healthy living initiatives is EAT.RIGHT.NOW. (ERN). ERN provides free nutrition outreach programs and services to all public school students, teachers, staff, administrators and parents. ERN is based at both school and community sites, during school hours as well as after school, and involves nutrition education at various levels. Some basic messages include nutritious snacking, increasing fruit and vegetable consumption, proper label reading, and understanding the importance of breakfast. ERN programs and services meet objectives established by the Pennsylvania Nutrition Education TRACKS. Our nutrition lessons and programs are approximately 45 minutes in length, and all follow-up lessons and activities provided to teachers comply with the Pennsylvania Academic Standards.

The School District was a key partner in Philadelphia's Communities Putting Prevention to Work (CPPW) nutrition and physical activity initiative in 2010-2012. In partnership with the Philadelphia Department of Public Health (PDPH), The Food Trust (TFT), and the Bicycle Coalition (BC) this initiative focused on increasing the availability of healthy foods, nutritional awareness and increasing physical activity for all students. This work continues in the city initiative, Get Healthy Philly.

A five year grant received in 2003 by the Philadelphia Department of Health in partnership with the School District and the US Department of Health and Human Services through the Center for Disease Control & Prevention. This grant has expired, however, the work continues. The School District's Wellness Policy and School Wellness Councils are results of the Steps grant. Also, Activity Works Recognized one of our schools (Loesche Elementary School) for Student Fitness and Performance in 2012.

The School District has a formally approved by the SRC Anti-Bullying Policy. The policy calls for students to be provided with instruction regarding the definition of bullying, the characteristics of a person who bullies, a person who is the target of bullying, and a bystander, and the reporting process. Schools will implement programs and activities that reduce the potential for bullying and identify those strategies annually in the School's Safety Plan and School Improvement Plan. Staff are provided training and professional development for effectively preventing, intervening in, and reporting incidents of bullying. A reporting, investigation and action plan have been established through this policy.

The School District's Food Services program administers a Harvest of the Month Program for one hundred and two schools. This program provides local fruits and vegetables and outreach materials. In Fiscal Year 2016, the School District invested \$102,000 in commercial blenders to develop a fresh fruit smoothie program, and, invested \$34,949 in increased spending on chicken products that are Certified Responsible Antibiotic Use. Further, this year we spent \$1,000 on a compostable tray pilot program.

### **PILLAR THREE: EFFECTIVE ENVIRONMENTAL AND SUSTAINABILITY EDUCATION**

*Provide a 1,500-word maximum narrative about how your school or district is improving sustainability and environmental literacy for students and staff. Below are guiding questions to help you frame your narrative.*

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

- Does your school or district have a graduation requirement for environmental or sustainability literacy?
- How are environmental and sustainability concepts integrated throughout the curriculum?
- Is your school district's curriculum aligned to the Pennsylvania Academic Standards for Environment & Ecology?
- If your school/district does not conduct environmental science, sustainability or environmental education assessments, what percentage of your students scored proficient or better on the state science education assessments last year?
- Are professional development opportunities in environmental and sustainability education available to all teachers at least every other year?
- Does your environmental education curriculum pay particular attention to scientific practices, such as asking questions, developing and using models, planning and carrying out investigations, analyzing and interpreting data, using mathematics and computational thinking, constructing explanations and engaging in argument, and applications based on evidence?
- Do your students have meaningful outdoor experiences (an investigative or experiential project that engages students in critical thinking, problem solving and decision-making) at every grade level?
- How are the sustainable elements of your building used as an educational opportunity?

#### **Insert Narrative Here:**

The School District of Philadelphia aims to infuse Education for Sustainability (EfS) into its school curriculum, school operations, administrative practices, and family and community engagement by:

- Integrating K12 curriculum, instruction and assessment with Education for Sustainability (EfS) standards;
- Cultivating administrative practices and policies that support EfS throughout the District; and,
- Strengthening and expand school, family and community engagement so as to enrich EfS.

The District has formed a partnership with the National Wildlife Federation's (NWF) Eco-Schools USA and there are nineteen registered Eco-Schools here at our District. This program is a tool that provides K12 schools with a series of steps and pathways to integrate sustainability principles throughout their schools and curriculum. These nineteen schools have access to grant opportunities through this program and are provided with a framework to successfully green their schools through ten possible pathways.

The Pennsylvania Department of Education states that students must demonstrate proficiency or above in Science and Technology and Environment and Ecology according to content standards developed that are PA Common Core aligned. The demonstration of proficiency in Biology is measured through a statewide administered Keystone exam. Demonstration of other science content,

including Environment and Ecology is determined by the local District. The School District of Philadelphia has developed an Environmental Science course that students take as part of the High School science sequence.

The School District's science curriculum was written as a collaborative effort of District curriculum specialists, teachers, and community partners. During its first year of release (2013) feedback was regularly solicited from teachers and revisions were made every year to make the curriculum more functional and relevant to the classroom teacher. Attention was also given to the scaffolding of content and adjustments were made through the vertical rollout of the curriculum to build foundational skills and concepts throughout the grades, beginning in Kindergarten. Assessment in science is administered in grades 4 and 8. Data from the 2015-2016 school year shows that only 38% of students in those grades tested at the proficient or advanced levels. Similarly, 36% of high school students taking the end-of-course Biology Keystone exam last year scored proficient or advanced.

Environmental science concepts are woven throughout the science curriculum from Kindergarten through Grade 8. The units are sequenced to build concepts and skills towards taking the High School level, Environmental Science course that covers the following units: 1. The Scientific Method & Introduction to Environmental Science; 2. The Basic Chemistry of Our Planet; 3. Biogeochemical Cycles, Systems, Spheres; 4. Ecosystem Dynamics; 5. Evolution & Biodiversity; 6. Biomes; 7. Population Dynamics; 8. Human Populations; 9. Agriculture and Society; 10. Humans & the Environment.

The School District science curriculum was built to align to the PA Core Standards in Environment and Ecology and to the Next Generation Science Standards (NGSS). Attention was given to creating a cross-alignment to English Language Arts (ELA) and Math Common Core Standards. The District's Curriculum Engine, an online repository providing curriculum mapping tools, access to resources, and professional development, facilitates the linking of units to include curated informational texts and problem solving challenges across content areas. Many schools demonstrate their involvement in sustainability efforts through school - community partnerships. Middle grades students at the Heston School in West Philadelphia are learning about water filtration and conservation from a village in Africa and are building their own rain collection barrels to feed their community garden in this urban desert area of the city.

The Penn Alexander School infuses environmental responsibility and sustainable practices into many of its lesson plans. When a deeper message is streamed through the core-curriculum, whether it is reading, writing, math, science or social studies, students are able to demonstrate their knowledge and understanding of the course content through the application of real world situations. Penn Alexander students and University of Pennsylvania student volunteers, from the Penn EcoReps program, performed a waste audit and designed and implemented a successful recycling program at Penn Alexander. Several months later, a second waste audit showed that cafeteria waste was reduced by 38%. One of the greatest results of this project was the attitude students showed towards recycling. Recycling has become a part of the school's culture, and students are excited about the positive impact it has on the environment. One of green champion teachers at the school has said that her teaching philosophy is that, by raising students' awareness of important environmental issues and how we can help solve them, students are compelled to live greener lives and encourage others to do the same. She hopes that her students will go on to help solve some of our planet's most urgent problems. In school year 2015-2016, through the National Wildlife Federation's Eco-campus partnership, several classes are collaborated with a school in Taiwan that completed a similar project. Students share their experiences through an online forum. In Physical Science, students investigate wind turbines as alternative energy.

Student groups are given a STEM challenge to design and build fully functioning windmills.

The Baldi Middle School Environmental Science Program is based on student centered ecological investigation, which leads to monitoring of local watersheds, habitats, vegetation, wildlife, wetlands and marine coastal environments. Classes are held in the historic Verree House on the grounds of Philadelphia's 1600 acre Pennypack Park. Students are involved in hands-on investigation and experimentation in all areas of science. This investigation includes water quality monitoring, botany, urban ecology, marine ecology, and engineering. Cooperative learning strategies are employed to incite students to identify environmental problems. Environmental students use the scientific method to collect and analyze data. Encouraging them to become stewards of our global environment, they develop and implement action plans that may involve service learning and community partnerships. Students develop research projects in all areas of science and the social studies. These projects are multidisciplinary and address cross-cutting competencies. They participate in many competitions on the local, state, and national level. These tournaments include: The Pennsylvania Junior Academy of Science, The Carver Science Fair, The Delaware Valley Science Fair, The National History Day Competition and The Future City Competition. Baldi students excel at all of these competitions and are recipients of many prestigious awards.

Sayre High School integrates principles of sustainability into teaching and learning by incorporating the EfS model framework into the all female "Maker's" and "Aquaponics" programs. These programs were created to address the need for women in STEM. In addition to preparing students for future career opportunities, these programs develop systems thinking and apply classroom knowledge to real world scenarios. The "Maker's" program students learn the basic concepts of electricity, electronics, soldering, and fabrication of circuits, while they manipulate programs to achieve the desired results on the very circuits they build. The integration of the two concepts provides the students with the critical thinking skills needed for real world application. Students that participate in Sayre High School's aquaponics program learn the basics of aquaculture, and hydroponic horticulture while using the devices created developed in the "Maker's" program. This hands on learning experience provides students with the opportunity to learn about the nitrogen cycle and the balance required in order for an ecosystem to thrive, while also providing them with professional skills such as collaboration and communication.

Lincoln High School's Environmental Technology Academy is dedicated to educating students to be stewards of the planet and to preparing students to be an ambassador for the environment by building upon relevant experiences in conservation of built and natural environments. Students learn to use and maintain resources responsibly as well as to develop and apply responsible use of sustainable systems. As a graduate from the Environmental Sciences Academy students communicate environmental sciences principals, demonstrate 21st Century Skills, and participate in improving their community's environmental conditions by becoming an active member of the community.

In other neighborhoods of the city, a partnership with the Philadelphia Water Department and the Fairmount Water Works has established the greenSTEM Network. The greenSTEM Network connects students to the environment by monitoring and mining data from schoolyard gardens and green stormwater infrastructure. Using low-cost, DIY electronics and open-source code, the greenSTEM Network displays real-time environmental data (such as soil moisture, precipitation, sunlight, and temperature) to help students maintain healthy school gardens, learn about waterrelated issues, and conduct scientific experiments. Through GreenFutures, the District provides a minimum, of nine EfS focused professional development opportunities for all District teachers per year. These events are a joint effort between the District and partners, and Act 48 credits are provided. Participants help to develop a learning community that has a shared understanding of EfS and engages educators in activities that combine systems thinking and cross curricular connections through the lens of sustainability. These professional development opportunities are designed to increase the awareness and understanding of the core concepts, content and outlook needed for instructional application. The most recent professional development workshop was provided in partnership with The Cloud Institute. This workshop engaged participants in activities that combine systems thinking, sustainable economics, and the science of sustainability.

### **Element 3B: Use of the environment and sustainability to develop STEM content knowledge and thinking skills**

***Provide an 800-word maximum narrative of how your school or district is utilizing the environment and sustainability to improve STEM knowledge and problem-solving skills. Below are guiding questions to help frame your narrative.***

- Does your general science curriculum include a deep understanding and connections of life, physical and earth sciences?
- Does your curriculum provide connections between classroom content and college and career readiness, particularly to post-secondary options that focus specifically on environmental and sustainability fields, studies and/or careers?

#### **Insert Narrative Here:**

The District's general science curriculum was designed to scaffold concepts, skills, and understandings, building on foundational knowledge as students progress through the grades. A uniform, consistent framework for science was developed to help teachers see connections, have ready access to curated content, and provide students with multiple modes for learning and exploring content. The framework includes the identification of PA Core Standards related to the grade level unit. These standards may be a combination of science subject content, or may be focused on a discrete few. Related NGSS standards are also listed to help teachers understand the higher level process and thinking skills required for college and career readiness. In most units, Math and ELA CCSS are also included. Using our digital, hosted Curriculum Engine available to all teachers, these related standards are linked to embedded resources that teachers may use to reinforce the interdisciplinary nature of science.

The District has also established a formal partnership with CK12, providing open-source content and technology tools to help teachers provide connected learning for students. Concepts can be related to other concepts in flexible ways. These concepts are presented in a "Learning Path" or sequence through the concept map – and this path can be reordered. Learning activities and resources include interactive textbooks, simulations, and explorations. Direct links to CK12 are included within each unit in our Curriculum Engine. Through our partnership with the Google Suite (FKA Google Apps for Education), resources can be immediately shared with students using Google Classroom, and teachers are able to use discussion threads to post and respond to questions.

Professional Development is offered monthly and teachers may select from a number of topics. Collaborative sessions are offered with local institutions such as the Philadelphia Water Works, The Franklin Institute, and other cultural institutions (UPenn Archeology Museum, Barnes Foundation, Philadelphia Museum of Art). These hands-on workshop connect science to real-world artifacts, such as mummies, armour, pigment, textiles to name a few.

Understanding the Urban Watershed Curriculum Guide, a framework for lessons on water, watersheds, and water use in the context of an urban environment was developed in collaboration with the Fairmount Water Works, the University of Pennsylvania Graduate School of Education, and teachers. The framework has an online teacher toolbox for teachers to explore in order to supplement their lessons. Links to specific lessons and resources linked throughout the Curriculum Engine in ELA and Science.

The Office of Career and Technical Education (CTE) provides students with the opportunity to acquire academic and technical skills for the high-skill, high-wage, and high-priority occupations of a competitive 21st century global economy.

CTE programs offer industry-recognized certifications, and operate in compliance with state and national CTE standards. Students that complete CTE Programs have the opportunity to earn up to twelve free college credits in participating colleges and universities

throughout Pennsylvania. W. B. Saul High School of Agricultural Sciences is situated on a 130-acre campus and features amenities such as a nursery with greenhouses, small animal laboratories, an arboretum, and a working farm which houses poultry, dairy, swine, sheep, horses and the meat science program, field crops and a pasture area for the livestock.

The Horticulture program covers plant growth requirements, soils, ecology and how to deal with pests and disease, among other topics. Horticulture offers outlets for creativity, blending the hands-on science and art, to design appealing displays.

In Natural Resource Management, students apply principles of biology, chemistry and ecology to understand the natural world, learn to identify and evaluate critical environmental issues and consider solutions for resolving and/or preventing problems. Project-based instruction emphasizes the conservation, protection and responsible human interactions with a range of natural resources, including the air, forests, soil, water, fish, plants and wildlife.

Students in the Animal Science program apply the core sciences of biology and chemistry to understanding animal reproduction, genetics, nutrition, physiology, handling, growth and management. Hands-on instruction, working with cows, sheep, horses, dogs and numerous small species takes place outdoors in the fields and barns, as well as in the classroom and labs.

In Food Products Science, students relate principles of biology and chemistry to the scientific processes that make foods healthier, tastier and safer for consumers. Instruction also examines the management decisions involved in inspecting, packaging, and delivering food products to market.

Ben Franklin High School offers a Renewable Energy CTE program designed to prepare students for the field of renewable energy and power generation. The growing demand for clean renewable energy has resulted in emerging technologies in electric power generation. Wind, solar, geothermal, and hydroelectric power generation have increased the demand for highly skilled technicians with the ability to install, service, and/or repair power generation, transmission and distribution systems. Instruction includes, solar, wind, hydropower, geothermal, DC/AC circuits, electronics, home energy production, batteries and storage devices, and electric motors.

### **Element 3C: Development and application of civic engagement knowledge and skills**

***Provide a 500-word maximum narrative of how your school or district is improving civic and community partnerships toward sustainability. Below are guiding questions to help frame your narrative.***

#### **Community and Civic Engagement**

- Are your students required to conduct an age-appropriate civic/community engagement project around a self-selected environmental or sustainability topic at every grade level?
- Do you partner with local academic institutions, businesses, government agencies, nonprofits, informal science institutions and/or other schools to help advance the school/district and community toward sustainability and other environmental issues?
- Do you have outdoor classrooms on your grounds that include native plantings or a community garden? If so, how do you use them to teach an array of subjects in context, engage the broader community and develop civic skills?
- What are other indicators or benchmarks of your progress toward the goal of 100 percent of your graduates being environmental and sustainability literate?
- What opportunities exist for parents to learn about the green practices implemented at your school, including how these practices are benefiting the children and reducing operation and maintenance costs?

#### **Insert Narrative Here:**

Many of the School District of Philadelphia's high schools require students to complete community service hours in order to be eligible for graduation, however it is not a District policy. Students involved in the CTE program participate in internship or apprentice programs throughout the City. In addition to the partnerships created through the development of GreenFutures, the Office of Strategic Partnerships (OSP) identifies, coordinates, and matches partner and volunteer resources and aligns them with the District-wide and school-based goals and priorities.

Over one-hundred local academic institutions, businesses, government agencies, nonprofits, informal science institutions and/or other schools districts that have a primary focus of Sustainability and/or STEM have long term partnerships with the District.

Through partnerships with Philadelphia Water, government officials, home and school associations, and community groups, the District has begun transforming Philadelphia's schoolyards into green schoolyards. The School District has constructed large scale green stormwater infrastructure projects at thirty-one schools since 2010. Over the next five years the District has committed to constructing an additional twenty-five green schoolyards.

In regards to bench-marking, the District monitors the number of registered Eco-Schools, educator attendance rates at GreenFutures' professional development events, planned District-wide initiatives such as our recycling and the Energy Education programs. These will provide information about the District's goal of 100 percent of graduates being environmental and sustainability literate.

Several opportunities exist for parents to learn about the green practices implemented on a District level and at the school level. The District's Office of Family and Community Engagement is creates and supporting partnerships among schools, families and community focused on enhancing parent engagement strategies to promote student achievement. The Parent University program provides parents and families with educational services; and building effective and sustainable family, school and community partnerships.

The District adopted comprehensive Policy 920—"School Advisory Councils"(SACs)—to significantly increase families and community involvement in the educational process. The policy was designed to ensure the establishment of an active and engaged SAC in each school for the purpose of accomplishing the following two goals:

- To encourage families to become actively engaged in the education of their children, and to represent parent voices and advance their role in the educational decision making process; and
- To interact effectively with all constituencies—families, community members, students, and district staff for the benefit of improving the achievement of all Philadelphia's school students.

SACs are peer elected, collaborative teams composed of family members (majority), the school principal, teachers or other school based staff, students (for schools with grades 7 – 12), and community members. SACs champion the work for improved student achievement, effective teaching in the classroom, parent and community engagement in the educational process, and communication and support between home and school.

Additional opportunities for parents and the community to learn about the District-wide and school based green practices include: Friends of groups/Home and School Associations, social media communications through the GreenFutures Facebook and Twitter Account, the GreenFutures website, GreenFutures annual progress report, the annual E-Day event and press releases or events.