



State of Rhode Island and Providence Plantations  
**DEPARTMENT OF EDUCATION**  
Shepard Building  
255 Westminster Street  
Providence, Rhode Island 02903-3400

Deborah A. Gist  
Commissioner

February 15, 2013

Andrea Suarez Falken  
Director  
U.S. Department of Education Green Ribbon Schools  
400 Maryland Avenue SW  
Washington, D.C. 20202

Dear Ms. Falken:

The Rhode Island Department of Education (RIDE) is pleased to announce that it is nominating Providence Career and Technical Academy for a Green Ribbon Schools award. RIDE believes this school has a minimal impact on the environment, a positive impact on the health of students and staff, and allows students to increase their environmental awareness.

Our application and scoring rubric are modeled after the U.S. Department of Education's application and rubric. Our online paperless application was open to the public for several months. Applications were scored by a panel of five members representing RIDE, the Rhode Island Department of Health and the Rhode Island Environmental Education Association. We also worked closely with the Environmental Protection Agency and the Rhode Island Emergency Management agency to streamline our 2013 application.

The Providence Career and Technical Academy is in Rhode Island's largest school district, the Providence Public School Department. The school is classified as disadvantaged as at least 60% of the Providence Career and Technical Academy's students receive free or reduced lunch.

Rhode Island has been at the forefront of the green-school movement, as school construction projects in Rhode Island are required to comply with the Northeast Collaborative for High Performance Schools Protocol (NECHPS). This ensures that approved projects provide high quality learning environments, conserve natural resources, consume less energy, are easier to maintain, and provide an enhanced school facility.

RIDE looks forward to continue participating in the Green Ribbon Schools program and foster widespread and integrated green practices from our local school districts. Please feel free to contact me at 401-222-4294 or at [Joseph.daSilva@ride.ri.gov](mailto:Joseph.daSilva@ride.ri.gov) if you have any questions or concerns.

Sincerely,



Joseph da Silva NCARB, REFP, LEED AP  
School Construction Coordinator  
Contact for the Rhode Island Green Ribbon Schools Award

Telephone (401)222-4600 Fax (401)222-6178 TTY (800)745-5555 Voice (800)745-6575 Website: [www.ride.ri.gov](http://www.ride.ri.gov)

The Board of Regents does not discriminate on the basis of age, sex, sexual orientation, gender identity/expression, race, color, religion, national origin, or disability.



## 2012-2013 School Nominee Presentation Form

### **PART I - ELIGIBILITY CERTIFICATION**

#### **School and District's Certifications**

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

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

# GreenRibbon



ED-GRS (2012-2013)

Page 1 of 4

## U.S. Department of Education Green Ribbon Schools 2013

For Public Schools only: [ ] Charter [ ] Title I [ ] Magnet [ ] Choice

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

Official School Name PROVIDENCE CAREER AND TECHNICAL ACADEMY  
(As it should appear in the official records)

School Mailing Address 41 FRICKER STREET  
(If address is P.O. Box, also include street address.)

PROVIDENCE RHODE ISLAND 02903  
City State Zip

County PROVIDENCE State School Code Number\* \_\_\_\_\_

Telephone (401) 456-9136 Fax (401) 456-9172

Web site/URL providenceschools.org/PCTA E-mail wobberson.torchon@ppsd.org

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

Wobberson Torchon Date 2/11/2013  
(Principal's Signature)

Name of Superintendent\* DR. SUSAN LUSI  
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

District Name\* PROVIDENCE PUBLIC SCHOOLS Tel. (401) 456-9211

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

Susan J. Lusi Date 2-14-13  
(Superintendent's Signature)

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



## **PART II – SUMMARY OF ACHIEVEMENTS**

### **Instructions to School Principal**

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

## **PART III – DOCUMENTATION OF STATE EVALUATION OF NOMINEE**

### **Instructions to Nominating Authority**

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

### **Nominating Authority's Certifications**

The signature by the Nominating Authority on this page certifies that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

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

Name of Nominating  
Agency

\_\_\_\_\_  
Rhode Island Department of Education

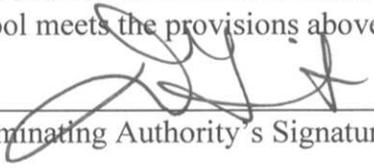
Name of Nominating  
Authority

\_\_\_\_\_  
Deborah A. Gist, Commissioner

\_\_\_\_\_  
(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.

  
\_\_\_\_\_  
(Nominating Authority's Signature) Date 2/15/13

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: February 28, 2015

**Public Burden Statement**

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email [ICDocketMgr@ed.gov](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.

At the Providence Career and Technical Academy (PCTA), we are a leader in our community. Over the last four years, we have emerged as a leader in sustainable building techniques and environmental education. Our teachers, students, and community take advantage of our state-of-the-art facility to teach, learn, and explore opportunities in environmental technologies, renewable energy, and healthy spaces.

Our job is to prepare our students for a successful future. By integrating our many disciplines, we prepare students for a sustainable future. We have noticed a growing movement in sustainability focused around the integration of disciplines and we have included into our curricula. Although our school does not currently have an Environmental Literacy graduation requirement, Rhode Island has a very progressive Environmental Literacy Plan. We incorporate this plan into our curricula and participate in the program. With such a progressive state-wide plan, we have access to many resources to improve our environmental literacy.

With the school's major reconstruction in 2009, we made the decision to overhaul all aspects of our school in regards to sustainability. We have unique opportunities being a high school with career and technical education programs located in an urban setting that receives support from our community and local business partners. Through building renovations, we updated the building systems to be as environmentally friendly and efficient as possible. With a facilities manager trained specifically on high performance schools, we know that our school gets the attention it needs to run as efficiently as it was designed to. Keeping our systems running efficiently is a large part of keeping our spaces healthy for building occupants

By including sustainability, environmental awareness, and energy efficiency education in our everyday classes, we teach our students how this will help to shape their futures. Being a career and technical academy, we have the unique opportunity to both teach our students through environmental education, as well as give them real world experience demonstrating what environmental education can do for them. In our engineering and construction programs, we focus stress the importance surrounding sustainable solutions and technologies.

At PCTA, we work not only to educate our students about sustainability and the environment, but we use our unique opportunities and building systems to spread awareness and education into our community. PCTA has a large auditorium and field house, which make the school ideal to hold special events. We use these events as a chance to show our environmental techniques and technologies to a wide range of our community members. We have a kiosk in our main entrance that allows visitors to track the buildings water usage, energy consumption, and learn more about the building's high performing systems. In 2010, we held a School as a Tool conference in our facility (attachment 3). This event was attended by State Senators, the EPA administrator and over 200 people. Topics covered at the meeting included Place-Based Learning, Indoor Air Quality, and Operations and Maintenance. This opportunity enabled the community to come in and see our new, green building, and also allowed us to demonstrate the ways that we use our school as a tool for our students. In addition, the event was catered by the Culinary Arts Program, which served local organic offerings.

Our school as a whole is constantly working on improving our sustainability. To do this, we review our current programs and work to see what we can do to make them more sustainable. For example, our guidance department now fills out FAFSA forms for students completely online, which saves paper, ink, and energy. We have also installed smart boards in every classroom, and some teachers are even accepting assignments digitally. We seek out partners like Expanding Minds and the Apeiron Institute

for Sustainable Living, who make it their goal to get students and the community interested and excited about a future in environmental studies and what that can mean for them.

Along with traditional environmental education, we work every day to ensure that our school is a safe and enjoyable place to learn. The learning environment we provide is vital to students' education and success in school. We are constantly looking for ways to improve upon our sustainability initiatives in all three of these pillars. When our students leave, they are healthier, smarter, and more prepared for the future of environmental techniques and technologies than they were when they started at PCTA.

For your convenience, we have uploaded a project based learning video  
<http://www.youtube.com/watch?v=0MxmDk0P3A&safe=active>

# Green Ribbon Schools Rhode Island Application 2013

Response ID: 93 Data

## 4. Page Three

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### School Contact Information

**School Name**

Providence Career and Technical Academy

**Street Address**

41 Fricker Street

**City**

Providence

**State**

RI

**Zip**

02903

**School Website**

providenceschools.org/PCTA

**Principal First Name**

Wobberson

**Principal Last Name**

Torchon

**Principal Email Address**

wobberson.torchon@ppsd.org

**Principal Phone Number**

401-456-9136

**Lead Applicant First Name (if different from principal)****Lead Applicant Last Name (if different from principal)****Lead Applicant Email****Lead Applicant Phone Number****Level**

High (9 or 10 - 12)

**School Type**

Public

**How would you describe your school?**

Urban

Does your school have at least 40 percent of your students from a disadvantaged background?

Yes

## 6. Page Five

Is your school participating in a local, state or national school program which asks you to benchmark progress in some fashion in any or all of the Pillars?

Yes

**Program(s) and level(s) achieved:**

CHPS Verified Design, EPA Energy Star, Schools for Tools

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

Yes

**Award(s) and year(s):**

2009 CHPS-NE Verified, 2011 Loraine Tisdale Environmental Grant, 2012 CHPS-NE Registered, 2012 and 2013 Rhode Island Green Ribbon Schools Award, 2012 Rhode Island State Winner - Keep America Beautiful Recycle Bowl, and 2012 2nd Place in District-wide school recycling competition

## 8. Page Seven

Can your school demonstrate a reduction in its Greenhouse Gas emissions?

Yes

**Please provide the following information:**

Percentage reduction : 19.09%

Time period measured (mm/yyyy - mm/yyyy) : 08/2010 - 08/2012

Initial GHS emissions rate (MT eCO<sub>2</sub>/person) : 2.19

Final GHG emissions rate (MT eCO<sub>2</sub>/person) : 1.77

Offsets : None

How did you document this reduction? : Energy Star Portfolio Manager

Has your school received EPA ENERGY STAR certification or does it meet the requirements for ENERGY STAR certification?

Yes

If your school received the certification, please note the year it was achieved and the score received:

Meets requirements

Has your school reduced its total non-transportation energy use from an initial baseline?

Yes

**Please provide the following information:**

Percentage reduction : 16.21%

Measurement unit used (kBTU/square foot, kBTU/student, annual therms, etc.) : kBTU/square foot

Time period measured (mm/yyyy - mm/yyyy) : 08/2012 - 08/2012

How did you document this reduction (ie. ENERGY STAR portfolio, district report)? : Energy Star Portfolio Manager

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

On-site renewable energy generation : 15%  
Type : Wind and Solar  
Purchased renewable energy : 5%  
Type : Combination for National Grid Power Company

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**In what year was your school constructed?**

1973; Renovated in 2009

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**What is the total building area of your school?**

300,000 square feet

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**Has your school constructed a new building or renovated an existing building in the past ten years?**

Yes

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**Please provide the following information:**

What is the total constructed area? : 300,000 sq. ft.  
What percentage of the total building area does this construction/renovation represent? : 100%  
Which certification (if any) did the school receive and at what level (e.g. CHPS Verified, CHPS Verified Leader, CHPS Designed, LEED Certified, Silver, Gold, Platinum)? : CHPS Verified

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**Do any parts of your existing buildings meet green build standards (for example, LEED, CHPS, Green Globes, or other standards)?**

Yes

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**Please provide the following information:**

What percentage of the existing building area has achieved green build standards (LEED, CHPS, Green Globes, or other standards)? : 100%  
What is the total building area (in sq. ft.)? : 300,000 sq. ft.  
Which certificate did the school receive and at what level? : CHPS Verified, CHPS Registered

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## 9. Page Eight

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**Can you demonstrate a reduction in your school's total water consumption (measured in gallons/occupant) from an initial baseline?**

Yes

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**Please provide the following information:**

Average Baseline water use (gallons per occupant) : 1590.33 gal/occupant  
Current water use (gallons per occupant) : 1248.88 gal/occupant  
Percentage reduction in domestic water use : 21.47%  
Percentage reduction in irrigation water use : N/A  
Time period measured (mm/yyyy - mm/yyyy) : 08/2010 - 01/2012  
How did you document this reduction (ie. ENERGY STAR Portfolio Manager, school district reports)? : Energy Star Portfolio Manager

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**Please provide the following information about your school's landscaping**

What percentage of your total landscaping is considered water-efficient or regionally appropriate? : 100%  
What types of plants are used and where are they located? : Perennial deciduous shrubs near entrances and walkways. Used to catch stormwater runoff.

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**Describe alternate water sources used for irrigation. (Maximum 50 words)**

There is no water used for irrigation on this property.

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**Describe any efforts to reduce stormwater runoff and/or reduce impermeable surfaces. (Maximum 50 words)**

Vegetation barriers were planted to absorb and filter stormwater and roof runoff to minimize effluent to watershed. Hazardous waste collection and regulation at the school prevents building users from pouring any dangerous materials into storm drains or disposing in any unsafe way. All building downspouts are directed away from paved surfaces to prevent runoff, and allow drained water to be filtered naturally.

**Our school's drinking water comes from:**

Municipal water source

**Please describe how the water source is protected from potential contaminants. (Maximum 50 words)**

**Describe the program you have in place to control lead in drinking water (Maximum 50 words)**

The city performs annual lead testing on potable drinking water at the school. There are check valves and backflow prevention systems to prevent contamination of potable water. Backflow prevention systems are inspected and certified annually, in addition to devices on individual equipment, like chillers, cooling towers and boilers.

## 10. Page Nine

**What percentage of solid waste is diverted from landfilling or incinerating due to recycling and/or composting (i.e. Recycling Rate)?**

A - Monthly garbage service in cubic yards (garbage dumpster size(s) x number of collections per month x percentage full when emptied or collected). : 160 cubic yards/month

B - Monthly recycling volume in cubic yards (recycling dumpster sizes(s) x number of collections per month x percentage full when emptied or collected). : 21 cubic yards/month

C - Monthly compostable materials volume(s) in cubic yards (food scrap/food soiled paper dumpster size(s) x number of collections per month x percentage full when emptied or collected). : None

Recycling Rate =  $(B + C) \div (A + B + C) \times 100$  : 11.3%

Monthly waste generated per person =  $(A/\text{number of students and staff})$  : 0.3 cubic yards/month

**What percentage of your school's total office/classroom paper content by cost is post-consumer material or fiber from forests certified as responsibly managed and/or chlorine-free?**

**Please provide the following information about your school's hazardous waste**

List the types of hazardous waste generated (Flammable liquids, corrosive liquids, toxics, mercury or other) : Waste oil, boiler treatment, mercury-containing lamps

How is hazardous waste measured? : Waste is measured by contracted environmental services company upon pick-up.

**1. Describe other measures taken to reduce solid waste and eliminate hazardous waste. (100 word Maximum)**

PCTA was recently awarded 2nd place in a district-wide school recycling competition. Through education and competitions, we have raised awareness centered on waste reduction and diversion. Being a technical school, we have unconventional opportunities for recycling in the school. We recycle as much as we can from these career programs, including all motor oil from the automotive program, cooking oil from the culinary program, and the sawdust from our carpentry classes. In the cosmetology program, we teach our students how to properly dispose of products. We label which products are okay to wash down the sink, and everything else is disposed of separately.

**Which green cleaning standard is used?**

Our cleaning programs follow Green Seal Compliance, although our programs are not certified. We have updated our cleaning processes from traditional mop and bucket techniques to make them more environmental and healthy for the building's users.

**Does your school use "third party certified" green cleaning products?**

Yes

**Please provide the following information about the green cleaning products used in your school:**

What percentage by volume of all cleaning products in use are "third party certified" green cleaning products? : 98%, Only our disinfectant is not certified, as it contains specific chemicals to kill bacteria. This product is required to clean high germ areas,

such as bathrooms and any special circumstances.

What specific green cleaning product standard (Green Seal, Ecologo, etc.) does the school use? : Green Seal

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**What percentage of your students walk, bike, bus, or carpool (2 + student in the car) to/from school?**

Close to 100%

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**How was this data collected and calculated? (Maximum 50 words)**

Student survey data was collected. Most students walk or bus to school, and those that drive carpool with students who do not drive.

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**Which of the following policies or programs has your school implemented:**

Our school has a well-publicized no idling policy that applies to all vehicles (including school buses).  
Vehicle loading/unloading areas are at least 25 feet from building air intakes, doors, and windows.

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**Describe how your school transportation use is efficient and has reduced its environmental impact. (50 word Maximum)**

As an urban school, the majority of our students are in walking distance. Those students living farther away are provided with free public bus transportation. This eliminates the need for school buses and utilizes Rhode Island Public Transit Authority's (RIPTA) hybrid technology clean vehicles. By developing the culture of walking to school and alternate transportation, we have reduced our overall carbon footprint.

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**Describe any other efforts towards reducing environmental impact, focusing on innovative or unique practices and partnerships. (100 word Maximum)**

Energy data, usage and cost are monitored by the City's Energy Managers through Energy Star Portfolio Manager and data from National Grid. The PCTA renovations included installation of energy recovery HVAC units, state of the art PDC controls with user interface and solar water heating. Waterless urinals were installed in the boy's rooms. The water used for heating and cooling is tested weekly and chemical treatment is provided to balance pH levels and control germs to comply with Narragansett Water Shed requirements. The controls for the dual temperature system operate pumps, chillers and boilers to optimize efficiency and eliminate waste.

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## 12. Page Eleven

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

Pesticide services are rendered on an as-needed basis. This allows us to keep pesticide use to a minimum, but makes measuring the volume of pesticide use difficult.

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**Which of the following practices does your school employ to minimize exposure to hazardous contaminants? (Please check all that apply)**

Our school prohibits smoking on campus and in public school buses.  
Our school has identified and properly removed sources of elemental mercury and prohibits its purchase and use in the school.  
Our school uses fuel burning appliances and has taken steps to protect occupants from carbon monoxide (CO)  
Our school has tested all frequently occupied rooms at or below ground level for radon gas and has fixed and retested all rooms with levels that tested at or above 4 pCi/L OR our school was built with radon resistant construction features and tested to confirm levels below 4 pCi/L.  
Our school has identified any wood playground or other structures that contain chromate copper arsenate and has taken steps to eliminate exposure.

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**Describe how your school controls and manages chemicals routinely used in the school to minimize student and staff exposure. (100 word maximum)**

ARAMARK has one engineer who is trained and responsible for water and boiler treatments. Having one, third-party trained engineer ensures that the chemicals are used and disposed of correctly. The school also has automatic chemical dispensing equipment for cleaning products. The dispenser ensures that chemicals are properly diluted and are not used at high chemical concentrations. Each school in the district has a Chemical Safety Manager who is part of the Science Department. This person is charged with ensuring that chemicals are used, stored and disposed of correctly.

**Describe actions your school takes to prevent exposure to asthma triggers in and around the school. (100 word max)**

Facilities managers perform weekly inspections. The inspections ensure that cleaning is being done thoroughly and correctly, and that only the approved chemicals are being used. A third-party inspection is done quarterly to confirm that all cleaning procedures are being done. The custodial process includes high dusting, which keeps dust out of the air. Our new program uses microfiber cleaning materials, which are better at picking up dust and dirt than traditional cleaning cloths and mops.

**Describe actions your school takes to control moisture from leaks, condensation, and excess humidity and promptly cleanup mold or removes moldy materials when it is found. (100 word max)**

Moisture conditions are monitored by ARAMARK, our contracted facilities operator. If mold is found, Providence Public School Department's Plant Maintenance Office is contacted and remediation is carried out.

**Our School has installed local exhaust systems for major airborne contaminant sources.**

Yes

**Describe your school's practices for inspecting and maintaining the building's ventilation system and all unit ventilators to ensure they are clean and operating properly. (100 word max)**

ARAMARK uses a Computerized Maintenance Management System (CMMS) which ensures that all building systems are cleaned and inspected on a regular schedule. The computer program automatically submits a work order when a piece of equipment is up for scheduled cleaning and preventive maintenance. The cleaning and maintenance is carried out by certified mechanics.

**Describe actions your school takes to ensure that all classrooms and other spaces are adequately ventilated with outside air, consistent with state or local codes, or national ventilation standards. (100 word max)**

CMMS scheduled maintenance and cleaning keeps ventilation systems up to code compliance. ASHRAE 62.1 ventilation standards are our basis for compliance. The recent renovations included the installation of CO2 monitors in classrooms and offices. The equipment monitors CO2 levels, and increases or decreases ventilation accordingly to ensure that all rooms are adequately ventilated and that the system runs efficiently.

**Describe other steps your school takes to protect indoor environmental quality such as implementing EPA IAQ Tools for Schools and/or conducting other periodic, comprehensive inspections of the school facility to identify environmental health and safety issues and take corrective action. (200 word max)**

We test annually for radon in our schools to ensure compliance with Rhode Island Department of Health regulations. Existing asbestos conditions are monitored and inspected internally. An outside hygienist is brought in to do a three-year inspection of all facilities.

### 13. Page Twelve

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**Which practices does your school employ to promote nutrition, physical activity and overall school health? (Please check all that apply)**

Our school participates in a Farm to School program or other program to utilize local food in our cafeteria.

Our students spent an average of at least 120 minutes per week over the past year in school supervised physical education.

**Please describe the type of outdoor education, exercise and recreation available. (Maximum 100 words)**

Behind our building is a green space that our physical education classes as well as academic classes use. Our outdoor education programs often include soil and biodiversity studies. The construction technical program uses the idea of a Living Lab. They use the context of the school and surrounding buildings to learn about different construction techniques and how buildings work relate to each other. The construction program recently built an outdoor general construction lab which was built with recycled materials. Many classroom excursions located within the city limits take place on foot, encouraging our students to walk throughout the city.

We strive to get our students outside more and moving around rather than spending every day in the classroom. This gets them more active and keeps them more attentive throughout the day.

A partnership has been established with Sodexo, Providence's Food Service Management Company. This partnership has created the following innovative initiatives:

- “Backpacker Program” this partnership provides needy students with a Backpack on Friday afternoon containing nutritious food for family to use on the weekend.
- Sodexo’s also offers a scholarship program to high school seniors.
- Through Sodexo, a recent Adopt a Farm partnership has been formed with Pezza Farm in Johnston, RI.

**Describe any other efforts to improve nutrition and fitness, highlighting innovative or unique practices and partnerships. (Maximum 100 words)** See Above

**What percentage (by cost) of food purchased by your school is certified as "environmentally preferable" (e.g. Organic, FairTrade, Food Alliance, Rainforest Alliance, etc.)?**

With the recently created Adopt a Farm partnership with Pezza Farm, land was reserved for the Providence Food Service Program for a variety of vegetables such as escarole, cucumbers, green peppers, green beans, tomatoes, summer squash, and romaine lettuce (just to name a few) which were put on the school lunch menus. In total, 10 acres and almost 30,000 pounds of local fruits and vegetables were harvested from Pezza Farm and served throughout Providence schools. With the success of this program, the reserved acreage for all of Providence Food Service is expected to increase to approximately 15 acres of farm land.

**Are RI Food Establishment Inspection Reports/Tools for Schools Food Service Checklists used to document compliance and made available to parents?**

Yes

## 15. Page Fourteen

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**Which practices does your school employ to help ensure the environmental and sustainability education? (Please check all that apply) Provide specific examples of actions taken for each checked practice, highlighting innovative or unique practices and partnerships.**

Environmental and sustainability concepts are integrated throughout the curriculum.: Integrated throughout biology, AP Environmental Science, and Career and Technical Education (CTE) programs.

Environmental and sustainability concepts are integrated into classroom based and schoolwide assessments.: Within the courses mentioned above

Professional development opportunities in environmental and sustainability education are provided for all teachers.: Rhode Island Sustainable Schools Conference, National Grid Renewable Energy Conference for Teachers, and FDA/NSTA Sustainable Food Science Program

**If your school serves grades 9-12, please provide the following information:**

Percentage of last year's eligible graduates who completed the AP Environmental Science course during their high school career : 21%

Percentage of these students who scored a 3 or higher on the AP Environmental Science exam : 0%

**How does your school use sustainability and the environment as a context for learning science, technology, engineering and mathematics thinking skills and content knowledge? (200 word max)** Attachment 1

**How does the school use the facility as a teaching tool for indoor environmental quality, energy efficiency, and renewable energy? (200 word max)**

Located within our science classrooms we have solar and wind power monitors that are directly connected to the panels and turbines on the roof of our building. Batteries store electrical energy generated by a demonstration photovoltaic panel and wind turbine. Students measure energy, collect data, and perform experiments with the energy. We also have two kiosks located within our building that collect and share data about our energy usage and water consumption by month. Our boiler room is oversized and accommodates visitors, which allows classes to learn and observe the functioning of the building.

With our heat recovery units, we are able to show our technical HVAC and construction students how efficient buildings can be run, and teach them about up-to-date green technologies. Through our cross-discipline programs, all students get tour the school and learn about all of the details that make it a green school.

Not only is our school an ideal teaching tool for air quality, efficiency and renewable energy, but we create our own spaces

through our construction program to teach our students how to build their own healthy buildings.

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

Green technology is incorporated throughout our career and technical programs, with a few of our instructors joining us with backgrounds in green construction. Students learn about sustainability options and alternate materials that create less environmental impact.

Our science department was the first public school in Providence to be awarded the 2011 Loraine Tisdale Environmental Grant, which has allowed them to engage in a research project where students follow the impact of trash flow starting from its source at the landfill, and following it all the way to the Woonasquatucket River. Another class has been partnering with Brown University to learn about sustainable farming. The Advanced Placement Environmental Science class travels to the Buckland Point Waste Water Treatment Facility to learn about the impacts of human water consumption.

Senior Research & Exhibitions - For one of the Performance Based Graduation Requirements, many of our seniors elect to conduct independent environmental research that connects to their CTE area of study. This year we have had projects on the environmental impact of local oyster farming and the impact on the economy, biofuel research, electric cars vs. traditional cars, and comparisons of construction utilizing green building supplies versus the use of traditional supplies. Twice during the year, our senior students present their research and findings to a panel of experts.

We use a Trainee Guide from the National Center for Construction Education and Research (NCCER) as part of our construction program. This guide provides green building information to our students including subjects from storm water runoff prevention, environmentally preferred materials, passive heating and cooling techniques, and practices to manage construction and demolition waste.

Link to CTE Program Videos:

[http://www.youtube.com/watch?v=\\_0MxmDk0P3A&safe=active](http://www.youtube.com/watch?v=_0MxmDk0P3A&safe=active)

This is the link to a video made at our school on project based learning. If you click on "CTE Prov" it will take you to all of the program videos.

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

Each of our Career and Technical Education programs is run and organized by an advisory board which consists of community members. This creates a relationship between the community and our school and students, and also helps us to provide services that the community is looking for.

Our school engages in an annual Earth Day project which involves all grade levels. Through our weekly advisory program, students learn about sustainability, complete projects, and pick up trash to help beautify the school.

Through class projects, students are additionally involved in community projects. Our science department was the first public school in Providence to be awarded the 2011 Loraine Tisdale Environmental Grant, which has allowed them to engage in a research project where students follow the impact of trash flow starting from its source at the landfill, and following it all the way to the Woonasquatucket River. Another class has been partnering with Brown University to learn about sustainable farming. The Advanced Placement Environmental Science class travels to the Buckland Point Waste Water Treatment Facility to learn about the impacts of human water consumption.

During the senior year students are required to complete 30 hours of community service, which is directly related to their CTE program. Some students collaborate to design and build projects, such as the concession stand at Mount Pleasant High School in Providence, RI. Carpentry, HVAC, Plumbing and Electrical students teamed up to design and build this project. (see attachment for pictures)

Woonasquatucket Greenway Cleanup - Every year in the spring, we take a group of student volunteers to clean up a local river/park/greenway which exists in the backyard of many of our students. Despite the event taking place on a Saturday, the students sign up to participate in large numbers and every year they have a wonderful time and they are constantly asking for additional volunteer opportunities. This past year the students weeded and mulched flowerbeds and then teamed up with a local artist to combine art and nature, developing environmentally themed trashcans and park signs. (see attachment for pictures)

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

Through each of our five construction-based career and technical education programs, students engage in outdoor experiences learning to complete skill on a job site, focusing on green building technology. One such project involved the students building a kiwi garden using the same design and structure involved in building bridges.

Students in mathematics frequently go outdoors to analyze the geometry of the world they interact with and take for granted. Some examples of the outdoor math projects involve measuring the height of our building and other through the use of clinometers. Students also analyzed and measured the angles involved in street parking lines painted on the pavement.

Seniors in the AP Environmental Science classes frequently go on outdoor learning expeditions to conduct various science experiments on the environment with which they are surrounded. These experiments include soil quality testing and comparing biodiversity on the school campus to other locations throughout the city.

Students in Ms. Markey's AP Environmental Class completed a "Back Yard" survey to collect leaf species from trees in the school field. Because of the knowledge they learned in carpentry, they were able to identify common tree species and their numbers and offer possible explanations of specie numbers. (They were amazed by the extensive root system of the Oak tree and realized why there was only 1 in the area). Students also learned how to respect organisms. They 'caught' a bee and I demonstrated to them how to release an organism. This activity was followed up by having students calculate primary productivity for each leaf specie they collected. The follow-up activity was to simulate biodiversity index of different ecosystem by counting the number of type of cars in two different parking lots. (see attachment for pictures)

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**Please describe professional development opportunities available in environmental and sustainability standards. Include the percentage of teachers who participated in these opportunities over the past 2 years. (Maximum 200 words)**

We send members of our faculty to a week-long professional development course provided by the Narragansett Bay Commission. Involved faculty members bring back resources to the classroom and have the opportunity to get students involved with the Narragansett Bay Commission. We plan to increase our involvement with the commission, and get more students involved in learning about Narragansett Bay, how it is affected by the city and what they can do to help keep our waterways healthy.

Teachers are encouraged to attend environmental Professional Development offered outside of the school. Such programs which have been attended in the past two years include the Rhode Island Sustainable Schools Conference, National Grid Renewable Energy Conference for Teachers, and FDA/NSTA Sustainable Food Science Program. We have had approximately 10% of our teachers who have participated in these opportunities over the past two years.

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

(Repeat Question)

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

Through our annual Earth Day community service project and outdoor experiments, we work to get our students outside and involved in the community and city around them. Our community is also engaged through advisory boards for each of our Career and Technical Education programs. Our Cosmetology program is working on building a relationship with Locks of Love to donate cut hair that is long enough to become wigs or hair pieces for patients undergoing chemotherapy.

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

Our partnership with ARAMARK Facility Services allows us to provide the cleanest and healthiest facility for our students and staff. We work with SODEXO, our food provider, to ensure that our meals are up to national and state standards, and that our food is fresher, healthier and more local than ever. We partner with Expanding Minds, an afterschool, educational program in Providence, where our students work on science projects, like making solar powered USB drives. Our partnerships with the City Energy Managers, ARAMARK and PPSD Plant Maintenance Department allow us to track and manage energy and water use, and keep our equipment running smoothly. ARAMARK, GILBANE BUILDING, and STUDIO JAED contracted, installed and manage our high performance equipment. These groups also provide demonstrations of energy efficient equipment, controls and sustainable systems and green building tours of the CHPS design features.

The Cosmetology program has a strong relationship with Joy Co., a product provider that has focused on environmental solutions. Our new color system is completely ammonia free, which makes it safer for the environment as well as our students who are handling it on a daily basis. Rather than disposable projects, we use reusable applicator bottles and bowls, and have switched our styling products over to those that contain only natural oils.

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

By integrating our curricula, we are able to incorporate environmental and sustainability education into courses that are not traditionally environmental or science-based. Our science classes have an integrated lesson with our cosmetology students to learn about pH levels. This program teaches our students about the pH levels in different products that are then compared to the pH of things they are familiar with, like water and lemon juice.

In biology, students collect food products, analyze food packaging, research farming practices, and research the transportation used to produce and deliver these items. Through this project, students begin to understand the importance of buying locally and how their choices as consumers affect the greater economy.

We have incorporated new technologies into our classrooms to reduce our material use and create a healthier school. In each of our classrooms we have Smartboards, which replaced chalk boards and the asthma trigger that was chalk dust. We also use an Interactive Response System, which allows students to enter answers to questions electronically in the classroom. Homework assignments are now available online with the option to also turn them in online. Smartboards, the Interactive Response System, and online homework cut out a significant amount of paper and printouts that are no longer necessary, as well as keeping students more involved in interactive studies.

## 16. New Page

**Summary Narrative: Provide an 800 word maximum narrative describing your school's efforts to reduce environmental impact and costs; improve student and staff health; and provide effective environmental and sustainability education. Focus on unique and innovative practices and partnerships.**

With the school's major reconstruction in 2009, we made the decision to overhaul all aspects of our school in regards to sustainability. We have unique opportunities being a high school with career and technical education programs, being located in an urban setting, and with help from our many community and business partners.

Through renovations, we updated the building systems to be as environmental and efficient as possible. We submit Operation Report Cards (ORCs) with CHPS to keep up our status as a green school. The ORCs, along with our partnerships, helps us to monitor and maintain the building systems to ensure the school's continued efficiency. Partnering with ARAMARK, a large-scale facilities service provider, we know that our buildings are maintained at the highest standards. With a facilities manager trained specifically on high performance schools, we know that our school gets the attention it needs to run as efficiently as it was designed to.

Through our updated building systems and continued monitoring and maintenance, we know that our buildings always run as efficiently as the day they were installed. Keeping our systems running smooth is a large part of keeping our spaces healthy for building occupants. Our ventilation system and CO2 monitors work together to keep the indoor air quality safe and clean for many users. Our partnership with SODEXO, a large-scale food service provider, ensures that our school lunches not only meet national and state standards, but that we have the resources of a national company to back them up. SODEXO has many initiatives that help back up our work to improve environmental health at PCTA. Working with Farm Fresh RI, SODEXO is able to partner with local farms to bring in as much local produce as possible, to serve along with traditional school lunches. SODEXO and Farm Fresh RI also work in our schools in increase awareness and education around local and fresh food.

We work hard to keep our building as efficient and healthy as possible for our occupants, but we recognize the true challenge in educating our future leaders. By including sustainability, environmental and energy efficiency education in our everyday classes, we teach our students about the environment, and how it will help to shape their futures. Being a career and technical academy, we have the unique opportunity both to teach our students through environmental education, as well as give them real world experience to demonstrate what environmental education can do for them. Specifically in our engineering and construction programs, we can focus a lot of energy around sustainable solutions and technologies.

At PCTA, we strive to integrate our disciplines so that they are not learning separately, but work together to teach lessons. This is especially true for our environmental education. We have developed curriculum maps for different areas of study. We lay these 'maps' side by side to see where the curricula overlap, and where our programs can work together. It is important to us to integrate our career and core subject areas so students can see the relationship between their technical courses and traditional courses like history, science and English. Integrative design and cross-departmental cooperation is such a large part of sustainability, we make sure to ingrain it into our students at this young age and as they begin to consider and start out their careers.

We seek out partners like Inspiring Minds and the Apeiron Institute for Sustainable Living, who make it their goal to get students interested and excited about a future in environmental studies and what that can include. Along with traditional environmental education, we work every day to make sure that our school is a safe and enjoyable place to learn. The learning environment we provide is vital to students' education and success in school.

We are constantly looking for ways to improve our sustainability initiatives in all three of these pillars. When our students leave, we hope that they are healthier, more educated, and prepared for the future of environmental techniques and technologies than they were when they started at PCTA.

## 18. Page Sixteen

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### Email Confirmation

Jan 15, 2013 13:49:09 Success: Email Sent to: wobberson.torchon@ppsd.org

### Response Location

<b>Country:</b>	United States
<b>Region:</b>	RI
<b>City:</b>	Providence
<b>Postal Code:</b>	02901
<b>Long &amp; Lat:</b>	Lat: 41.821999, Long:-71.421898

## Attachment 1

### **How does your school use sustainability and the environment as a context for learning science, technology, engineering and mathematics thinking skills and content knowledge?**

The PCTA Science Curriculum focuses on the various ways that humans impact the ecosystem. In order to provide students with the opportunity to apply this knowledge in context, this unit is taught in conjunction with our CTE programs which also focus on sustainability. For example, biology students learn about the various causes of global warming. This topic is co-taught in HVAC where students evaluate the various chemicals and exhausts released into the atmosphere from HVAC equipment and how this contributes to their ecological footprint.

Science Olympiad - We have 15 sophomore students participating in RI Science Olympiad. These students study environmental topics such as water quality, glaciation, public health problems, long-term climate change, forestry, earth's hydrosphere, rocks and minerals, and thermodynamics. In preparation for their events students go on environmental site visits to see evidence of science in action, they utilize our teacher resources within the building (in particular through our CTE construction trades), and we have a partnership with Brown University, where volunteers teach our students in-depth science in their field of expertise.



Our construction and HVAC programs work together to build an integrative relationship that we see more and more in green building. The two programs complete a seven week session that is purely science-based and focuses on the indoor and outside pressure put on a building, and how this effects both the HVAC and construction of the building. These programs are supported by faculty members that are LEED Accredited Professionals, which provides our students with real-life examples of green building, and the variety of aspects that are considered in a LEED Certified building. Our programs focus on buildings of all scale, from residential to large-scale complexes. As our school was built on a renovated brownfield site, it has become a part of our curriculum. We teach our students about how to choose a building site, and what goes into cleaning up a brownfield.

Many of our courses have included carbon footprint calculations into their curriculum. For example, in our core science classes, the students are given the tools to calculate their personal carbon footprint and determine ways that they can reduce their impact. In our Electrical technical curriculum, our students learn about different lightbulbs and their energy efficiency. They use this information to calculate how much energy and pollution could be eliminated by switching over bulbs at a home, versus a school, versus an entire neighborhood and a city.

Our plumbing program teaches students about the impact over waterless water heater tanks, compared to traditional water tanks. They use large and small-scale examples to show how much this change can impact the environment.

## Attachment 2

During the senior year students are required to complete 30 hours of community service, which is directly related to their CTE program. Some students collaborate to design and build projects, such as the concession stand at Mount Pleasant High School in Providence, RI. Carpentry, HVAC, Plumbing and Electrical students teamed up to design and build this project.



Woonasquatucket Greenway Cleanup - Every year in the spring, we take a group of student volunteers to clean up a local river/park/greenway which exists in the backyard of many of our students. Despite the event taking place on a Saturday, the students sign up to participate in large numbers and every year they have a wonderful time and they are constantly asking for additional volunteer opportunities. This past year the students weeded and mulched flowerbeds and then teamed up with a local artist to combine art and nature, developing environmentally themed trashcans and park signs.



### Attachment 3

Students in Ms. Markey's AP Environmental Class completed a "Back Yard" survey to collect leaf species from trees in the school field. Because of the knowledge they learned in carpentry, they were able to identify common tree species and their numbers and offer possible explanations of specie numbers. (They were amazed by the extensive root system of the Oak tree and realized why there was only 1 in the area). Students also learned how to respect organisms. They 'caught' a bee and I demonstrated to them how to release an organism. This activity was followed up by having students calculate primary productivity for each leaf specie they collected. The follow-up activity was to simulate biodiversity index of different ecosystem by counting the number of type of cars in two different parking lots.



# 'SCHOOL AS A TOOL' FORUM



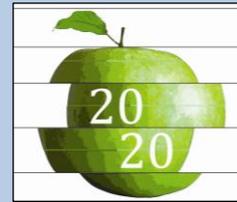
Northeast Energy Efficiency Partnerships

Wednesday, October 20, 2010 – 9am-1:30pm

(Registration/Coffee – 8am, Lunch – 11:30pm)

Providence Career & Technical Academy

91 Fricker Street, Providence, RI 02907



**ATTENTION: Superintendents, School Committees, Business Managers, Principals, Teachers, Facility Managers, Students, Green Teams, Educational Planners, School Nurses, and Community Members:**

NEEP and the RI High Performance Schools Working Group invite you to this **FREE event** where educators will learn how to take an integrated approach to sustainable school improvements, education, and maintenance. Online registration available at <http://www.surveymonkey.com/s/Z6P7W6X>.



AND ENERGY AWARENESS MONTH.

At the **'School as a Tool' Forum** you will learn about managing, maintaining, and educating in sustainable schools. The three main components of 'School as a Tool' are:

- *Place-based Learning Experience*
- *Maintenance and Operations*
- *Indoor Environmental Quality*

Experts and educators in each of these areas will be on hand to lead practical and informative discussions about the implementation and integration of each of these components. Schools will learn the components of a *'Green Team'* - a highly motivated and empowered group of stakeholders, including principals, teachers, facility managers, students, nurses, and parents, that help create and sustain healthy, high performance learning environments for our students.



Image: SLAM Collaborative, Gilbane, Studio JAED

**The PCTA facility is a world class high performance school as verified by the NECHPS protocol.**

Sponsors:



## Program at a Glance (Subject to Change)

### “SCHOOL AS A TOOL” FORUM

#### *A Children’s Health and Energy Awareness Month Event*

#### Providence Career and Technical Academy (PCTA)

Wednesday, October 20, 2010

**7:45 – 9:00 Registration; Refreshments & Exhibitors’ Tables** (Main Lobby)

Student-guided green school facility tour – Highlighting Green Program Elements

**9:00 – 9:45 Opening Plenary** (Auditorium)

- Welcome: Thomas Brady, Providence Public Schools Superintendent
- Introductions: Deborah Gist, RI Commissioner of Elementary and Secondary Education
- Opening Remarks: Honorable Sheldon Whitehouse, US Senator
- Keynote: Curt Spalding, US Environmental Protection Agency Regional Administrator

**9:45 – 11:30 Panel Presentations & Discussions** (Auditorium)

*MC:* Carolyn Sarno, NEEP Senior Program Manager High Performance Schools

**Place-Based Learning Experience:**

- Bridging curriculum and facilities by making students aware of their surrounding built and natural landscapes. Use of the school as a hands-on laboratory with opportunities for real world problem solving. Integration of greening activities into science, art, math, language arts, and electives.

*School Green Teams:* Paul Crowley MET School & Scituate High School

**10:15 – 10:30 Break/Educational Interactive Kiosk Demonstrations/Exhibits/Networking**

**Operations and Maintenance:**

- Ensuring the operation and maintenance of school facilities are providing safe and healthy high performance and high quality learning environments. Tracking and sharing information about the conservation of natural resources – water, energy, etc.

*Panel:* Susy Jones, NEEP Associate High Performance Schools  
Karen Verrengia, Cranston Public Schools Energy Manager (Energy Star)

**Indoor Air Quality:**

- EPA Tools for Schools – Providing healthy indoor environments through the implementation of Indoor Environmental Quality Management Plans. ‘Tools for Schools’ is a comprehensive resource to help schools identify, correct, and prevent IAQ problems.

*Panel:* MaryBeth Smuts, Ph.D., US Environmental Protection Agency  
Tom Caruolo, Rhode Island Department of Health

**11:30 – 12:30 Lunch/Exhibits/Network** (Cafeteria; Catering by PCTA Culinary Arts Program)

- Remarks: Ramon Torres, Providence Career Technical Academy Principal

**12:30 – 1:30 Closing Plenary Session** (Auditorium)

- Sustainable Food-Room to Grow: Carolyn Dias, RIDE Chief of Fiscal Integrity and Efficiencies
  - Emily Desrosiers, US Department of Agriculture Program Specialist
  - Dorothy Brayley and Karin Wetherill, Kid’s First
- Career Tech. Ed.: Andrea Castaneda, RIDE Chief of Accelerating School Performance
- Closing Remarks: TBD