

PART II - HIGHLIGHTS REPORT READY SUMMARY NARRATIVE

Boston Public Schools, Boston, Massachusetts

Boston Public Schools (BPS) is located in Boston, Massachusetts, and serves 48,777 students in grades PreK-12 in 119 schools across 132 buildings. As a city agency, BPS follows the City of Boston's 2019 Climate Action Plan and partners with the Mayor's Office on the Green New Deal (GND) for BPS. Led by the Sustainability, Energy, and Environment Program, Boston Public Schools implements a Whole-School Sustainability approach for making BPS schools healthier, greener, and more equitable for all students, staff, and families. This approach is realized through BPS investments and progress in drinking water, indoor air quality, outdoor teaching and learning, zero waste, STEM and climate change education, and sustainable transportation.

In the past 5 years, BPS has been recognized locally, nationally, and internationally for its leadership in various green schools' topics, particularly indoor air quality, outdoor teaching and learning, and reducing lead in drinking water. We have presented on these topics at the annual Green School Schools Conferences and School Sustainability Leaders summits, Greenbuild 2017 and 2019, Center for Green Schools and EPA IAQ Tools for Schools webinars, and more, sharing our best practices and "what-not-to-do's" with transparency, honesty, and humility, in hopes of helping other school districts and learning from them in return. We frequently engage with other K-12 districts through the Center for Green Schools School Sustainability Leaders Network, sharing everything from programs to job descriptions to policies to funding opportunities. We feel proud and fortunate to share our lessons learned with other districts nationally and internationally, all of us working together to make K-12 education greener, cleaner, safer, and healthier for all school communities.

PART III - DOCUMENTATION

Green Ribbon Schools Pillar 1: Reducing Environmental Impact

Improvements to K-12 school facilities save schools money, strengthen the nation's energy security, and conserve natural resources.

Pillar 1, Element A: Improved energy conservation/energy-efficient building(s)

The City of Boston is striving towards carbon neutrality while preparing for climate change and preserving the city's natural resources and historic sites. As a city agency, Boston Public Schools follows the City of Boston's 2019 Climate Action Plan and partners with the Mayor Michelle Wu's administration on the [Green New Deal \(GND\)](#) for BPS, as first announced in 2022. Immediately for GND, BPS has published a [Building Dashboard](#) which integrates data from the SY22 Opportunity Index and information on each school building's capital assets and environmental conditions. BPS has also hired Bureau Veritas Technical Assessments to complete a Facilities Condition Assessment (FCA), a detailed analysis that will produce a larger, in-depth dataset of building conditions and make recommendations for repair, replacement, and renovation. Once it's complete, the FCA will be integrated into the BPS Asset Essentials management system, which tracks all work orders and capital projects, to maintain real-time data on the state of BPS buildings. Thirdly, BPS is working with DLR Group, Inc. to complete a School Design Study, a set of programming and design recommendations to guide future renovations and construction of BPS schools, informed by authentic engagement with Boston community members. The Sustainability, Energy, and Environment Program provided DLR Group with its BPS [green school building design standards](#), which incorporate preferences from the Boston Student Advisory Council.

Prior to the announcement of the GND, BPS, led by the Sustainability, Energy, and Environment Program, has addressed energy conservation and energy efficient buildings through retrofits and upgrades at the school building-level, and through new construction projects, and school community education and engagement. Here are some progress highlights to address Pillar I:

Over the past 10 years, BPS Office of Instructional and Information Technology (BPSTechnology) has reduced the BPS on-site data center footprint by 50% through a combination of virtualization efforts and shifts towards cloud services. Additionally, BPS built a new, state of the art data center in 2015 that increased the efficiency of our energy and cooling systems for on-premise data and networking services.

In partnership with National Grid and Steam Trap Systems, BPS Facilities Management completed new steam trap installations in 71 schools during 2018. A total of 6,900 steam traps were replaced at no cost to BPS, with an anticipated energy savings of 30% (guesstimated that 30% of steam traps may have been faulty.) This equates to an unadjusted gas savings of almost \$200,000/yr.

BPS utilities are managed and operated by the BPS Energy Division, in partnership with the BPS HVAC, Plumbing, and Electrical Divisions. The Energy Division utilizes Building Management Systems to monitor and manage all BPS building utilities, and to find efficiency and conservation opportunities while balancing occupancy comfort levels. The Energy Division projects, monitors, and analyzes utility usages and costs, and reports this information on a monthly and annual schedule to BPS leadership.

Due to concerns of cybersecurity and building energy efficiency, the Sustainability, Energy, and Environment Program is currently working with BPS' ATC and Mechanical contractors to upgrade the BPS Building Management System (BMS) to EcoStruxure. In addition to upgrading the necessary software and hardware features, we plan to connect our new Indoor Air Quality (IAQ) sensors to the

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BMS in our Central HVAC buildings. As we add new HVAC systems to non-mechanically ventilated schools, we will connect those schools' IAQ sensors to the BMS as well. We are funding phase I through ESSER, and we have applied for additional funding from the U.S. DOE's Renew America's Schools grant opportunity.

BPS participates in the Metropolitan Area Planning Council and City of Boston's program to reduce BPS Demand Capacity Load during the New England grid-wide peak demand times. Typically, grid-wide peak occurs once or twice per year, for one (1) hour in July or August. Participation requires shutting down Air Conditioning and Ventilation (only) at BPS community schools for that one-hour period, thus reducing BPS electricity demand during the critical grid-wide peak demand time. BPS Energy Division usually receives an alert notifying them of the expected peak hour, then curtails the demand in certain high demand buildings by starting the existing cogeneration units. In the past 5 years, BPS has earned nearly \$500,000 in Demand Response and AECs payments, not including Capacity Costs offsets.

District Greenhouse Gas Emissions: The Building Emissions Reduction and Disclosure Ordinance 2.0 requires all large building owners to report their energy use and carbon emissions data annually through 2050. Beginning in 2025, the City has set benchmarking carbon budgets for building types ranging from schools to offices to multifamily housing complexes and the City has committed to reporting energy data from all of its buildings to demonstrate compliance. Calendar year 2021 data (for which we have the most recent accurate and complete year of data) suggests the following about BPS emissions: 45,702.4 Metric Tons CO₂e total emissions (35,686.5 Direct (Type 1) Metric Tons CO₂e emissions, and 10,015.89 Indirect (Type 2) Metric Tons CO₂e emissions accounting for 18% RPS (12,214.5 Metric Tons if you ignore RPS)); 4.11 kgCO₂e/sq. Ft. weighted average carbon emissions intensity.

District % of energy obtained from renewable sources: BPS meets RPS minimum standards. In 2021 it was 18% and in 2022 it was 20%. That means that in 2021, 18% of electricity on the grid in New England (and used by the City of Boston/BPS) is [verifiably generated by renewable sources](#). 28 BPS schools are currently enrolled in the standard CCE product which provides renewable electricity at 10% (i.e. 28% in 2021) above RPS. If you take 2021 data and account for additional emissions savings related to CCE enrollment, the aggregate percentage of electricity obtained from renewable sources was ~21%.

Renew Boston Trust (RBT): BPS is partnering with PFD, COB Environment Department, and Honeywell to complete energy and water efficiency upgrades at ten BPS schools as part of Renew Boston Trust Phase 3. Phase 3a Planning/Anticipated Savings in RBT: Scope includes lighting upgrades, building envelope improvements, water fixture replacements, and pipe insulation; Buildings include Boston Latin Academy, JFK Elementary, Condon, Murphy, Taylor Elementary, Russell Elementary, Otis Elementary, Ohrenberger, Tynan Elementary; Dollar Savings estimated \$382,237/yr; Unit Savings estimated Water: 3,842.1 kgal/yr; Power: 4,962.8 kW/yr; Energy: 1,143,499.9 kWh/yr; Natural Gas : 16,380.2 therms/yr.

RBT Phase 3b: Scope includes DHW upgrades, cooling tower replacements, condensing unit replacements, BMS upgrades, demand response program participation, AHU/RTU/UV Replacements, Boiler replacements, pool dehumidification units, end-of-life HVAC unit replacements, miscellaneous HVAC upgrades, lighting upgrades, capping abandoned exhaust openings and ventilation shafts, insulation of unit ventilator intake plenums, pump replacements, high efficiency motors and VFDs, walk-in freezer/cooler controls, cogeneration system controls, high efficiency transformers, and continuous commissioning/building energy optimization. BPS school buildings included are Condon K-8, Murphy K-8, Ohrenberger, and Tynan Elementary. Projected Dollar Savings will be \$218,641/yr; Unit Savings - Power: 1,492.1 kW/yr, Energy: 1,007,062.4 kWh/yr; Natural Gas : 42,884.5 therms/yr

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RBT Phase 3c: While the scope is still in development, we anticipate that it will include ventilation, heating, and cooling equipment upgrades to schools with existing steam heat distribution systems: Boston Latin Academy, JFK Elementary, Taylor Elementary, Russell Elementary, and Otis Elementary. We also expect a number of new solar arrays and associated roof upgrades.

BPS Facilities Management and City of Boston Public Facilities Department (PFD) adhere to strong utilization of and collaboration with the Massachusetts School Building Authority (MSBA) Accelerated Repair Program (ARP). This program focuses on the preservation of existing assets by performing energy-efficient and cost-saving upgrades, by replacing roof, window or boiler systems, resulting in direct operational savings for school districts. Since 2018, BPS/PFD have completed 15 MSBA Accelerated Repair Program projects. 9 additional projects are submitted or starting design with anticipated construction dates in 2024.

New BPS buildings since 2018 and performance since 2018:

- 1) Eliot K-8 Innovation School (585 Commercial St.): A former office building, construction on the building began in 2017, and the 42,000 square-foot facility opened as a school September 2019. The facility is the latest addition to Eliot's three-campus school. Numerous building features promote sustainability and resiliency, including a new reflective roof, high R-Value insulation at the building envelope, and high performance glazing that maximizes natural light. Mechanical improvements include an electrical service on the second floor, for climate resilience, a fire protection system and 98% efficient boilers. The site also includes a stormwater retention system and low-flow plumbing fixtures. The school was designed to meet LEED v4 for Schools Silver Certification. The waterfront location connects students to their natural and historical environment, with access to the Boston Harbor and the Freedom Trail.
- 2) Dearborn STEM Academy: This \$70 million Boston Public Schools facility was secured in 2013 by Roxbury community leaders for the students, families, and community of the Nubian Square neighborhood. Dearborn STEM Academy, opened in 2018, is certified LEED GOLD, and utilizes a roof-mounted photovoltaic array to reduce energy consumption and reduce the building's carbon footprint. As a school endeavoring to entice students into STEM career pathways, the building itself is offered as a teaching tool. Featured integral elements of the building such as the differentiated south and east/west sun control elements, exposed balcony suspension steel, illuminated HVAC ring duct above mesh ceilings and color-coded glass enclosed mechanical penthouse are meant to excite technological curiosity and encourage lifelong learning in and out of the classroom.

The project prioritized accurate fulfillment of 100% daylighting for all primary classroom spaces. All student bathrooms are located on outside walls and bathed in diffused natural light in order to promote safety and well-being. The daylighting relies on the innovative use of continuous prefabricated radiant panels 8' above the regular classroom perimeter. These form light shelves which, through extensive clerestory glass, bounce light off of the 14 foot exposed deck ceilings to the depths of the classroom. Unwanted daylight is mitigated by horizontal sunshades at the South side of the building. East and West glare is deflected by vertical sunshades. The daylight is supplemented by atrium skylights with clerestory interior glazing sharing light with the cafeteria, adjacent classrooms, and hallways.

Mechanical distribution utilizes 'displacement ventilation' with silent low-volume air flow providing many times the fresh air of that available through conventional unit ventilators. The distribution system reduces energy consumption by mitigating heat stratification. The central

physical plant features high efficiency condensing boilers, variable speed pumps and energy recovery wheels.

Landscaping/Habitat/Biodiversity: The prior building and associated pavements occupied almost its entire site with zero setbacks from the public rights of way. The new project is set back from the sidewalk along Greenville St. allowing for greenscape and closely spaced tree plantings. The rooftop terrace and learning commons garden are a release from indoor confinement, providing opportunities for students to move easily to outdoor classroom activities. Dark Skies: All exterior light fixtures are dark sky compliant. Bird-Friendly Design: The typical classroom elevations eschew large expanses of glass in favor of vertically organized windows and bay window features. Biophilia/Connection to Nature: 100% of occupied spaces have views to the surrounding verdant residential neighborhood.

- 3) Boston Arts Academy (BAA): The Boston Arts Academy is Boston's only public high school for the visual and performing arts. The new 153,000 GSF building, opened in 2022, was designed to meet the City of Boston's 2050 Carbon Neutrality Goals. Except for providing gas to the science classrooms and kitchen, the building is 100% electric. No fossil fuels are burned onsite to support the mechanical system. Other sustainable design strategies include Passive Systems, such as 1) Triple-glazed curtain wall windows paired with high-performance exterior envelope [Exterior Walls (R-37 composite), Roof (R-52) & Slab (R-20 composite)] resulting in significant reduction in quantity and size of Heating, Ventilating and Air Conditioning (HVAC) systems as well as improved acoustics, improved thermal comfort within spaces and improved Passive Survivability/Resiliency for the building overall; 2) Sunshades on curtain wall windows and bays in response to sun-orientation resulting in less heat gain and solar glare that improves visual and thermal comfort and reduces cooling loads (= reduced energy); 3) Use of ceramic frit coatings on select areas of glazing resulting in less heat gain and solar glare that results in improved visual and thermal comfort and reduced cooling loads; and Active Systems such as 1) Energy efficient "On Demand" outdoor air ventilation system with heat recovery and air-source heat pump tempering resulting in reduced energy use and improved air quality for better cognitive function; 2) Energy efficient heating/cooling systems (Variable Refrigerant Flow Units) at learning spaces that allows for each space to respond to heating/cooling demands of the room, which results in reduced energy use and greater comfort. Radiant heating/cooling panels have been added in select learning spaces that have large glass bays for improved thermal comfort. These panels also act as an interior light shelf to reduce glare; 3) Energy efficient, fully dimmable LED lighting systems which result in energy savings and increased occupant control; 4) Use of Occupancy and Vacancy sensors on lighting throughout the project; 5) Use of Energy Star rated appliances and food service equipment. The results for the BAA energy model analysis show that the Proposed Design has an energy use intensity (EUI) of approximately 31.6 kBtu/sf-yr, achieving energy savings of 50% and energy cost savings of 52% (16 points for EAc2 in LEED v4) over the LEED v4 Baseline condition. Through the use of the sunshades and ceramic frit, the solar heat gain reduction for the overall project was 26% with a reduction in solar heat gain and glare of more than 40% within individual classroom spaces. The project has a minimum expectation of achieving LEED v4 for Schools Silver Certification, but we are currently tracking additional points for Gold Certification.
- 4) Josiah Quincy Upper School (JQUS) (construction underway): JQUS is a 6-story high rise with an occupiable roof for students in grades 6-12. The project is 178,000sf, slated to open SY24-25, sited at the threshold of Boston's Chinatown neighborhood and along a major highway. The JQUS project has set high standards for efficiency, resiliency, and environmental health and is on

its way toward achieving LEED v4 for Schools Gold Certification. It is designed with highly insulated walls, windows, and roof to minimize energy use in heating and cooling. The building is all-electrically powered using very efficient heat-pump technology. No fossil fuels are used for heating, cooling, or cooking in the school. All mechanical systems that could be, were raised above the First Floor, protecting them from a flooding event. Measures taken with the design pre-Covid have proved effective in a post-pandemic environment. Enhanced air filtering is used to assure that very clean ventilation air is brought into the building, creating a safe indoor environment despite being adjacent to the highway. An innovative “Displacement Air” system reduces the potential spread of contaminants among students within the classroom. Sustainable and renewable materials, like bamboo, are used on finishes throughout the school. Nearly all classrooms face south to maximize natural daylighting, increasing student well-being and minimizing the need for artificial lighting. The school is topped by a large outdoor educational space in which students can gather, study, and relax in fresh air and the roof garden with native plantings.

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

Drinking Water Access: The availability of free, safe water for all students and staff in the Boston Public Schools is integral to the mission of the district in supporting healthy habits. Per BPS policy and state law, all students must have access to water throughout the school day, at no cost. Additionally, federal law requires that water must be available at no cost during meal times wherever meals are served. BPS achieves this through a combination of bottled water (due to aged, or lack-thereof, fountain infrastructure across the district), served through 5-gal bottles on coolers, and filtered bottle refill stations, thanks to the new Drinking Water Access Initiative (described below.)

BPS follows the guidance of the U.S. Lead Contamination Control Act (LCCA). The LCCA directs the United States Environmental Protection Agency’s (EPA) and its state designees (in our case, MassDEP) to assist school system administrators, schools, and programs, to identify and reduce or eliminate lead contamination in their facilities’ drinking water. BPS also follows EPA’s revised 3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities Toolkit, and the subsequent recommendations from MassDEP for deactivation levels for lead and copper. The safety of a fountain’s drinking water is confirmed through testing, which is guided by our Drinking Water Access Policy. The BPS Drinking Water Access Policy outlines testing procedures for the activation of new drinking water units, and annual testing of all units across the district used for consumption or food prep in order to closely monitor our water quality and continuously improve our practices. If an existing fountain has an elevated level of lead or copper, it is immediately deactivated, and the remediation actions could include installing a filter system, replacing pipes, or replacing the existing fountain with a new fountain.

For example, since the passage of the 2016 Drinking Water Access Policy policy, BPS:

- 1) has seen improved annual test results (2019: Out of 733 units tested across 80 schools in 2019, less than 0.7% of samples representing 5 schools had lead or copper exceedances; 2021: Out of 795 units tested across 102 schools in 2021, approximately 2% of samples representing 13 schools had lead exceedances. Three schools had a total of 5 copper exceedances. Spike due to units being off in 2020 due to COVID-19 guidance. 2022: Out of 836 units tested across 112 schools in 2022, less than 0.5% of samples representing 3 schools had lead exceedances. Only 1 sample location at 1 school had a copper exceedance);
- 2) in partnership with Harvard T. H. Chan School of Public Health, published a BPS drinking water study to identify gaps and improvements (2018-2019);

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- 3) was awarded the 2018 Massachusetts Public Water System Awards: Systems Taking Action to Reduce Lead (STAR-L) Award;
- 4) passed an updated policy and new district-wide procedural document in 2019 to meet new Federal and State regulations, and require deactivating individual units instead of an entire school. Reviewed and approved by MassDEP, Boston Water & Sewer Commission, Boston Public Health Commission, and EPA Region I. MassDEP shares the new policy and procedures as a model for Massachusetts public school systems;
- 5) takes action on units with lead levels above 1 ppb to reduce those levels to the lowest possible concentrations;
- 6) began collecting samples for coliform testing of filtered water units;
- 7) completed a pilot, switching 17 BPS schools from bottled water to fountains and bottle refill stations. In total, 90+ new fountains/refill stations and 51 new filter boxes were installed;
- 8) hosted Massachusetts State Officials for the January 2020 announcement of new state funding programs to address lead in drinking water in schools and child care facilities;
- 9) launched the BPS Drinking Water Access Initiative.

In November 2020, BPS launched its new 3-4 year [Drinking Water Access Initiative](#), thanks to a commitment of \$10.36M in capital funds from former City of Boston Mayor Martin J. Walsh and a \$6.215M U.S. EPA Reduction in Lead Exposure Via Drinking Water Grant. The initiative is installing new filtered bottle refill stations across the district, moving all BPS schools from bottled water to tap water for drinking water access. Since the launch of the Initiative, BPS has installed and tested 295 filtered water bottle refill stations, switching 30 schools from bottled water to Boston's excellent tap water. Transitioning these 30 schools to filtered tap water has saved the district over \$200,000 annually in bottled water operations costs, and significantly reduced the environmental impacts of delivering bottled water to schools. The initiative is making strong progress with 6 school buildings currently under construction, and an additional 31 schools slated to have construction completed by the end of 2023.

All water testing results are shared with the school leadership, school community, and are posted publicly on the [BPS Water Website](#). This transparency keeps the BPS community informed of our testing procedures and outcomes, building confidence in our drinking water and rebuilding trust in our building infrastructure and water communications. BPS efforts were highlighted in the National School Board Association's 2022 article "[10 Tips for Eco-Friendly Facilities](#)".

Domestic Water Conservation: Ongoing replacements of existing fixtures to code compliant and more accessible fixtures has helped BPS reduce its overall domestic water consumption. All new construction and major renovation projects will specify EPA WaterSense rated fixtures.

Green stormwater infrastructure: In partnership with the Boston Water and Sewer Commission, green stormwater infrastructure features were designed and installed at 5 schools across the district: Irving, Hernandez, Jackson/Mann, Ellis, and EM Kennedy. These sites provide responsible management of stormwater onsite and reduce runoff, and represent examples of how green infrastructure and best management practices can be implemented at 5 vastly different school locations.

These green stormwater features are now used as a case study to inspire and inform new green infrastructure projects across the city and provide valuable education opportunities to BPS students and the public. BWSC and the design team developed a [Stormwater and Green Infrastructure Curriculum](#) for 7th graders that has been integrated into their science curriculum offering a unique experience of classroom and in field education. Each site is equipped with interpretive signage to explain the function of the features found on the surface and reveal details of the actions below ground, bolstering the curriculum for students and informing public passersby. BPS teachers Nicole

Ruttan and Kris Grymonpre were awarded the 2019 Massachusetts Secretary’s Award for Excellence in Energy & Environmental Education for their “Stormwater Management Curriculum integration pilot program”, using the Irving’s GSI to teach the curriculum at Umana Academy and McCormack Middle School. The sites have also been utilized during seasonal maintenance days where emerging professionals working towards their National Green Infrastructure Certification gain field experience and meet industry professionals from partner organizations such as Charles River Watershed Association, X-Cel Education, and Horsley Witten Group.

New irrigation & water management protocols for outdoor teaching and learning assets: To reduce water usage, native plants are selected and installed into layered landscape gardens. All plantings are mulched. During the establishment period plants are irrigated using drip irrigation to reduce water usage. Afterwards, irrigation is used only during drought cycles. WaterSense labeled irrigation controllers, coupled with soil sensors, monitor moisture levels in the soil. Smart irrigation apps will be used to monitor systems. Wherever feasible, stormwater will be captured from roofs and paved surfaces to water schoolyard plantings, and to create rain gardens and bioswales. For all new construction, permeable pavements will be utilized.

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

BPS is committed to zero waste because 1) Recycling is BPS district policy and MA state law; 2) School zero waste programs mitigate clutter, which attracts pests, creates asthma triggers like dust, and takes up valuable school space. 3) School zero waste programs create experiential and collaborative learning opportunities for students and staff; 4) Reducing waste helps us reduce greenhouse gas emissions; 5) The principles of zero waste – redesign/rethink, reduce, repurpose, replace, reuse, recycle – teach us responsibility for our schools and our waste, and engages us in the three E’s of sustainability: Equity, Environment, and Economy. BPS strives to reduce the amount of waste generated by our schools and reduce the non-recyclable waste that is hauled to and disposed of in landfills or incineration facilities. BPS Facilities Management and its district and city partners provide multiple operational services to address the district’s diverse waste streams:

- **TRASH:** The BPS trash contract includes language for the hauler to pay for BPS recycling equipment (\$10,000/year from 2018-2021; \$5,000/year from 2022-2027), and contribute support for zero waste education in the schools, including up to 10 school waste audits annually.
- **SINGLE-STREAM RECYCLING:** BPS recycling is collected curbside by the City of Boston Public Works Department’s residential recycling program. BPS Facilities Management provides each school with the equipment (7-gal classroom bins, 32-gal barrels, 95-gal carts) they need to successfully recycle in their schools. BPS schools put outside an estimated 820 95-96 gal recycling carts per week to be serviced PWD. Signage in multiple languages is also provided to ensure communication and education is accessible for our diverse BPS community.
- **FOOD WASTE COLLECTION:** BPS is piloting a food waste collection program at 10 schools having signed a contract with Black Earth Compost. Two schools have been launched as of February 2023. The program includes engagement and education opportunities with students and teachers, like waste audits, compost making, and leadership/champion roles.
- **TECHNOLOGY/E-WASTE:** BPS Office of Information Technology (OIIT) manages the district’s e-waste. All retired computer assets are disposed of using an e-waste recycling partner or resold if still usable. We require recycling vendors to be ISO 45001, ISO 14001, ISO 9001 and R2 Certified. Downstream recycling partners must be ISO 14001 certified and e-Stewards or R2 certified. School custodial staff complete and submit a form to OIIT in order to have waste collected by

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the vendor. From 2018 - 2023, BPS has successfully recycled nearly 32,000 electronic items. Common e-waste items include computers, televisions, monitors, toner, and printers.

- **UNIVERSAL AND HAZARDOUS WASTE:** Universal Waste is collected on an annual basis to ensure light bulbs are disposed of properly. Hazardous Waste is collected on an as-needed basis. These waste removals are managed by the BPS Environmental Division with certified vendors. All schools have designated, separated areas for Universal Waste and Hazardous Waste.
- **FURNITURE:** All no-longer-needed furniture is stored within the district. It is BPS and City of Boston policy to first auction off any of this furniture.
- **YARD WASTE:** All yard waste is collected separately from solid waste and composted through a vendor. This process is managed by the BPS Grounds Crew. From 2021 through January 2023, BPS has diverted 397 yards of yard waste including leaves and branches.
- **CARDBOARD:** BPS Facilities Management collects cardboard from the schools for recycling separately from our single stream recycling. In 2022, BPS diverted 197 tons of cardboard from landfill which reduced our carbon footprint by 178.6 MTCO_{2e}, the equivalent of taking 141 cars off of the road.
- **TEXTILES:** Thanks to a City of Boston contract, BPS partners with textile recycling company Helpsy to place clothing donation bins at schools, which helps BPS be in compliance with the Massachusetts Department of Environmental Protection's (MAssDEP) Textiles Waste ban. Schools receive \$.07 per pound of donated clothing. Since establishing the partnership with Helpsy in 2021, BPS has placed bins at 11 schools, diverting 195,000+ pounds of textile waste and raising \$13,000+ for the participating schools! Nine other BPS schools have Bay State Textiles boxes diverting over 100,000 pounds of textile waste which has raised \$5,000+ for the participating schools.

Equipment, Education, and Outreach: In addition to direct outreach and engagement at the schools conducted by the Sustainability, Energy, and Environment Program (which hired the district's first ever Zero Waste Manager FTE in August 2022), BPS provides schools with a [number of tools and resources](#) to support zero waste. These include trash, recycling, and compost multilingual signage, a Zero Waste Guide, a curated Recycling Education Resource List, the BPS Declutter Guide, the recyclopedia and trash day apps, and the BPS Recycling Equipment Order form. From 2017 to present, BPS Sustainability distributed new recycling equipment to BPS schools: 2017-2019: 211 curbside 95-gallon recycling carts, 228 32-gallon recycling barrels, and 4,154 classroom recycling 28-quart bins. 2019-2020: 129 carts, 105 barrels, 1043 bins. 2020 to 2021, even with the shift to remote learning: 35 carts, 47 barrels, 119 bins. From 2022 to date: BPS 34 carts, 39 barrels, 651 bins.

From 2018-2021, BPS averaged 20-30 schools annually participating in MassDEP's The GREEN TEAM. Chittick Elementary School teacher Teresa Strong and her students were recognized as 2021-2022 Green Team Grand Prize Winners for their recycling leadership.

Brighton High School's Recycling Program enables students with moderate disabilities that are on a non-diploma track to learn leadership, organizational, and communication, and vocational skills for post secondary life. It helps them become more independent members of society and allows them to be part of the broader community of the school. The team regularly works with BHS staff and students to ensure that all recyclable materials are placed in the proper receptacles and encourage students and staff to reduce paper waste throughout the school year. The Recycling Program has reduced Brighton High's paper waste (worksheets, projects, etc) by 39% since starting 5+ years ago.

Prior to the pandemic, BPS Facilities Management installed 40 new hand dryers in student bathrooms across 10 schools, branded with the BPS logo and sustainability facts related to waste and energy.

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Excel Hand Dryer partnered with BPS Sustainability and BLS YouthCAN to develop a resources conservation curriculum to accompany the hand dryers. This effort was featured at the 2019 Green Schools Conference. Hand dryers are the preferred spec for all new school construction.

The *Green Catalyst Quarterly* article [“Boston Public Schools Strives for Zero Waste”](#) is used in Auburn University’s online course “Leading Green Schools”.

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

Boston Public Schools is an active participant in the Boston Safe Routes to School (SRTS) Task Force, promoting Walk to School Day events throughout the year, piloting Walking School Bus programs, and improving arrival and dismissal operations to improve safety and efficiency. Currently, the Boston SRTS Task Force represents a citywide collaboration between the BPS Office of Health & Wellness, BPS Transportation, Boston Public Health Commission, Boston Transportation Department, and MA SRTS.

Beginning SY19-20, all BPS students in grades 7-12, with an option to opt in for 6th grade, received free “M7” MBTA passes to ride the subways, buses, and certain Commuter Rail lines. Beginning SY22-23, students assigned door-to-door transportation through an IEP or 504 plan were concurrently assigned MBTA passes to support students gaining independence using public transportation and, long term, increase using public transportation options. An estimated 35,000 students have MBTA passes.

BPS follows an anti-idling policy of no idling of buses or other motor vehicles on school property per MGL Chapter 90, Section 16A. An estimated 115 BPS school building sites/campuses have bike racks, and bike racks are incorporated into all new BPS school building designs.

As of 2015, the entirety of the BPS fleet ran on diesel fuel. BPS Transportation began turning its fleet over to greener fuel in 2016. As of January 2023, 57% of BPS’ active bus fleet runs on propane. By the end of February 2023, 67% of the fleet will be either propane or electric as we take delivery of and deploy 72 new vehicles, decommissioning many diesel vehicles in the process. BPS plans to continue transitioning to a fully electric fleet over the next ten years. As of SY22-23, BPS Transportation will only [purchase electric buses](#) when buying new buses, instead of diesel or propane, to address the carbon emissions and health impacts of fossil fuels. One of BPS’ three bus yards’ electrical generation is supported with solar panel arrays. BPS plans to bring renewable energy generation and electric charging capabilities to all BPS bus yards. An estimated 21,000 students ride the BPS buses.

BPS has two electric and seven hybrid vehicles in its Operations staff fleet, and two electric vehicle charging stations at the Facilities Management Department’s headquarters. As we purchase new vehicles and custodial equipment, we always first investigate electric options. For example, last summer we purchased 25 electric lawnmowers instead of gas-powered lawnmowers.

Green Ribbon Schools Pillar 2: Improved Health and Wellness

Healthy school environments help students and educators remain healthy and strong.

Pillar 2, Element A: An integrated school environmental health program

BPS recognizes that healthy physical environments are critical to the prevention of asthma and other chronic and infectious diseases that impact learning. To that end, our district is committed to providing high-performing school buildings and grounds that are clean, in good repair, have healthy IAQ and water quality, have sanitary, accessible bathrooms, and use resources efficiently. BPS strives to provide adequate facilities for physical activity that are accessible and culturally-inclusive learning environments that positively impact the productivity, health, and wellness of all students and staff.

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Environment, Health and Safety at BPS is managed by the BPS Environmental Division, within the Sustainability, Energy, and Environment Program. The Environmental Division is responsible for monitoring the environmental quality of BPS buildings and properties, with an emphasis on improving air quality within classrooms, utilizing simple integrated pest management (IPM) techniques, managing asbestos, and testing all water sources used for drinking, food preparation, or medical services.

To address environmental risk factors for chronic and infectious disease, every school annually receives two Environmental Audits, one conducted by the BPS Environmental Division and one by the Boston Public Health Commission, to evaluate health and safety conditions such as leaks, mold, pests, chemical storage, and cleanliness. Results from the audits are shared with the appropriate Facilities Management trades (e.g., Alterations & Repairs, Plumbing, HVAC, etc.) to rectify, while immediate life and safety issues (e.g., mold, asbestos, lead) are addressed by the Environmental Division following all regulations and supported by licensed contractors. Every BPS school has an active Integrated Pest Management Plan and AHERA Management Plan, which are required to be stored and readily available, in each school's respective Main Office. The Environmental Division maintains IPM, asbestos monitoring and removal, lead abatement, environmental site remediation, drinking water testing, and LSP services contracts to provide the necessary environment, health, and safety services for all BPS schools.

The COVID-19 pandemic provided a long overdue "moment" for indoor air quality in schools to be prioritized. Beginning 2020-2021, BPS implemented the Medify-40 HEPA air purifiers in all BPS classrooms, upgraded to more than 4,300 MERV-13 filters where allowable by the HVAC equipment, distributed 6,500+ fans to classrooms for exhausting air, inspected 27,000 windows and repaired 12,500 of them, and conducted 750+ air exchange/ACH tests across all schools, helping us make adjustments to increasing fresh air intakes in mechanical ventilation systems and demonstrating the excellent air changes per hour provided by open windows. We sourced ventilation and IAQ guidance from CDC, ASHRAE ([example of BPS compliance](#)), U.S. EPA, and Harvard T.H. Chan's Healthy Schools program.

In January 2022, the BPS Sustainability, Energy, and Environment Program launched an innovative and pioneering Indoor Air Quality (IAQ) Monitoring System across Boston Public Schools to measure the schools' indoor air quality, with the goals of improving IAQ and thermal comfort, promoting health, and supporting optimal learning and teaching for our students and teachers. We installed 4,400 IAQ sensors in all classrooms, Main Offices, and Nurses' Offices, and 119 rooftop Outdoor Air Quality sensors across all BPS schools and connected them to an [online, public dashboard](#). The data collected from these sensors helps us identify, review, and respond to indoor air quality and temperature issues in real-time, and advocate for HVAC and other building investments to improve indoor environment quality. For example, MA DESE recently approved our \$15.4M IVAQ grant application, which will be used to design and implement new HVAC systems in 5 non-mechanically ventilated schools. This work will provide a case study for balancing IAQ with energy efficiency. We also are partnering with Boston University Public Health on an approved research study, "Understanding indoor air quality, thermal comfort, and energy use in classrooms, and the impact of SARS-CoV-2 engineering controls, a pilot study." The study is transforming the sensor data into research data, and includes data analysis and reporting, addressing inaccuracies in data due to calibration, connectivity, and power issues, and developing IAQ communications materials (e.g. [newsletters](#)) for the BPS community. Since launching the IAQ Monitoring System, we have been invited to [present](#) our work to the White House's Office of Science and Technology Policy and the White House COVID-19 Taskforce, the U.S. EPA, the National Caucus of Environmental Legislators, the Environmental Law Institute, USGBC, state public health

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officials in WA and CA, UK scientists and policymakers with TAPAS, and more, influencing international, federal, and state resources for improving IAQ in schools.

BPS also supports “Healthy School Environments” through the District Wellness Council to promote the building health and ensure continuous improvement of BPS healthy school environment programs. District departments and all schools, through school-based Wellness Councils, comply with existing federal and state regulations, city ordinances, and district policies related to promoting and managing healthy school environments. BPS district-wide policies include: 1) Healthy School Environments; 2) Green Cleaners; 3) Integrated Pest Management; 4) Recycling and Zero Waste; 5) Infection Prevention & Control; 6) Tobacco Free Environment Policy; 7) Environmental Audits; 8) Drinking Water Access; 9) Laboratories and Chemical Inventory “Right to Know” Law; 10) Science Safety in Laboratories and Classrooms; 11) No Idling of buses or other motor vehicles on school property, and participation in Safe Routes to School per MGL Chapter 90, Section 16A, 12) AHERA Management plans for asbestos, and 13) Tobacco & Nicotine Free Policy. All district policies and procedures can be accessed on the [BPS website](#).

Adhering to the Green Cleaners Policy, BPS Custodial Services utilizes cleaning, sanitizing, and disinfecting products that are Green Seal Certified, UL EcoLogo Certified, USDA BioPreferred, American Chemistry Council list approved, or EPA N list approved, respectively. Prior to the pandemic, BPS Custodial Services staff (~500) were [trained](#) annually in-person by Facilities Management in the areas of recycling, energy conservation, drinking water access, green cleaning, reporting environmental or building hazards, universal and hazardous waste, and integrated pest management. BPS Facilities Management would also annually recognize Custodians with Healthy and Sustainable Custodial Awards, opening a nomination process to all schools. 14 Custodians received awards in 2018, including a team award for leading a massive school decluttering project, and 8 Custodians received awards in 2019. We hope to bring the awards back in 2023, which were put on hiatus during the pandemic.

Pillar 2, Element B: Health, Wellness, and Nutrition

The BPS District Wellness Policy was created to align with the Whole School, Whole Community, Whole Child (WSCC) model. The BPS District Wellness Policy seeks to ensure all students are safe, healthy, welcomed, engaged, supported, and challenged. The eight content sections of the policy are: (1) cultural proficiency, (2) school food and nutrition promotion, (3) comprehensive physical activity and physical education, (4) comprehensive health education, (5) healthy school environments, (6) safe and supportive schools, (7) health services and (8) staff wellness. The policy requires schools to establish school-based wellness councils that are responsible for assessing the school on implementation of the wellness policy, developing an action plan, and implementing the action plan. BPS maintains a Superintendent-appointed District Wellness Council (DWC). The DWC develops, recommends, reviews, and advises on implementation of school district policies that address student and staff wellness. The council is made up of BPS Central Office department heads, school-based staff and administration, community partners, and students and family representatives, all of whom offer expertise in the various health-related issues addressed by the policy. General membership to and attendance at the DWC is open to all stakeholders and the public. This council creates a space where collaboration can happen across organizational silos and disciplines to develop high standards for healthy school facilities, instruction, student services, and engagement of staff, students, and families.

The DWC, through the Office of Health and Wellness, also supports Wellness Champions in the eight content sections. For example, BPS Sustainability, Energy, and Environment Program trained and supported 11 2018-2019 BPS Healthy School Environment Champions, who completed schools-based

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environmental projects, such as recycling, green cleaning, and decluttering, at their schools. That year, for creating a school environment where students understood how to reduce, reuse, and recycle and took ownership to implement the three R's into the culture of the school.

Food and Nutrition Services: In collaboration with the BPS Department of Food and Nutrition Service (FNS), the Shah Family Foundation, and the City of Boston Public Facilities Department, BPS Facilities Management renovated 106 school kitchens within a four-year period. Of the 106 kitchens, 81 have been rolled out to support on-site meal preparation and cooking. Due to the pandemic, 25 schools remain to be rolled out during the school year 2022-2023. FNS and Facilities Management also partner closely on IPM and water testing all kitchen equipment used for food prep to ensure healthy, safe cooking and eating spaces in BPS schools. Most recently, FNS and the Sustainability, Energy, and Environment Program collaborated with Green City Growers on two grant application submissions (USDA Farm-to School and DESE MA Farming Reinforces Education and Student Health) to pilot hydroponics experiential learning programs in BPS high schools, prioritizing schools that lack garden programs.

The BPS Sustainability, Energy, and Environment Program and its garden partners contributed to the [2022 Food Literacy in Massachusetts report](#) published by the Massachusetts Food System Collaborative. The report and Collaborative's efforts have led to the recent filing of the bills "An Act to promote food literacy" (SD.1348 / HD.2580). The bills would add food literacy to the list of topics that students should learn about in school; ask the MA Department of Elementary and Secondary Education (DESE) to help identify appropriate materials and curriculum and provide professional development activities; establish a Food Literacy Trust Fund that could be used by schools to support this programming; and enable DESE to convene a working group of educators and others with expertise in the food system to guide the implementation of food literacy.

Outdoor Teaching and Learning (OTL): In 2022, BPS made major investments in outdoor teaching and learning, utilizing ESSER funds to carry on the legacy of the Boston Schoolyard Initiative (BSI). The BSI, a public-private partnership between the City of Boston, Boston Public Schools, and the Boston Schoolyard Funders Collaborative, renovated 88 schoolyards and created 38 Outdoor Classrooms from 1994-2014, and created an accompanying outdoor teaching and learning curriculum. Teachers and students utilize the spaces for art, science, writing, and ESL enrichment.

In addition to hiring the district's first ever Outdoor Teaching and Learning Manager, and creating a new section of the BPS Grounds Grew dedicated to the outdoor classrooms and gardens, the 2022 investments are being used to: Operate, renovate, and redesign 38 Outdoor Classrooms (OCs) and begin designing new outdoor classrooms; Add new school garden partnerships with Green City Growers and CitySprouts and sustain existing ones (BPS currently has 51 partner-led school gardens and 28 Teacher Champion-led gardens, totaling 79 active school gardens; 23 school gardens are new in 2022); Provide professional development, stipends, and materials budgets to Outdoor Teaching and Learning Champions (identified school teachers); and Fund "Rites of Passage" experiences for students in 7th grade with Boston Nature Center, Thompson Island Outward Bound Center, and Hale Reservation.

Green Ribbon Schools Pillar 3: Effective Environmental and Sustainability Education

Incorporating environmental and sustainability concepts into your education program can create a community of green-minded citizens.

Pillar 3, Element A: Interdisciplinary learning/coursework

Climate Science at Boston Public Schools is addressed continuously through the curricular offerings aligned to the 2016 MA STE Frameworks. A few [examples](#) include 1) Elementary example- beginning in PreK, 3 and 4 year-olds observe how weather changes daily and begin to see patterns (preK.ESS.2-5(MA)) Observing Nature Unit, by 3rd grade students are using data to chart (tables and graphs) and predict weather changes (seasons) (3.ESS.2-1) Water and Climate Unit; 2) OpenSciEd middle school units explore climate, climate change and sustainability through units including: 6.3 Weather, Climate, & Water Cycling; 7.6 Earth's Resources & Human Impact; 8.4 Earth in Space; 3) OpenSciEd high school units (currently being field tested) include exploring energy flows (physics), ecosystems: interactions, energy and dynamics (biology); the units are based in phenomenon that students must investigate in order to develop understanding of the core concepts; 4) Outdoor Teaching and Learning classrooms - lessons embedded within the FOSS curriculum bring students outside of the traditional classroom to investigate a myriad of phenomena. Lessons on erosion, deposition, and weathering; insects and plants their complex relationship to each other; animal/insect habitats and human impacts.

The BPS Science, Technology, and Engineering (STE) Department has collaborated with BPS's Early Childhood Department on their *Focus* curricula. *Focus* is a literacy curriculum that incorporates environmental literacy throughout its units. Children are also asked to identify problems and design solutions to many environmental issues we face (like the use of plastic bags or recycling materials.) Environmental Justice & Literacy: Departments are working to integrate environmental justice into literacy (writing/ELA) units. Some example topics include: *Rising Heat & Extreme Temperatures* (Grade 3), *Urban Coyotes* (grade 4), *Food Systems* (Grade 5), *The United States Pipeline System* (Grade 6).

Boston Student Advisory Council and BPS STE developed climatecurriculum.com, k-12 science lessons on climate change that are publicly available.

Boston Green Academy offers a fully approved Chapter 74 Career & Technical Education (CTE) program in Environmental Science, available to students in grades 9-12. Intended for those with an interest in a career in environmental science, students take in-depth courses, experience special field trips and projects, learn how to operate a Freight Farm, and learn how to run a business. Students partner with industry leaders for internships and explore the career possibilities. Upon completion of the program, they also receive valuable industry-wide certifications that can open doors to employment and strengthen college applications. BGA is the only school in Boston to offer this program.

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

As part of its Whole-School Sustainability approach, the BPS Sustainability, Energy, and Environment Program promotes BPS schools as living learning laboratories for sustainability and as the "third teacher" for children, inspired by higher ed's "Campus as a Living Laboratory" and the Loris Malaguzzi concept of physical environment as a teacher for children. We ensure schools as living learning laboratories through our school building design standards and our implementation of experiential learning opportunities, like the aforementioned zero waste, outdoor teaching and learning, and energy conservation programs that create school-based opportunities for students and staff to engage, teach, and learn about sustainability and climate change, even developing green jobs skills.

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BPS Sustainability, Energy, and Environment Program curated an [Energy Education Resource List](#) and a [Recycling Education Resource List](#). BPS Sustainability, Energy, and Environment also co-authored the “Things You Can Do at School” section of the City of Boston’s [Climate Action Guide](#). We also have additional resources available on our [Boston Green Schools Curriculum page](#) and throughout the website. Other topics include environmental justice, climate change, water, and transportation.

The use of BPS school buildings as living learning laboratories is also demonstrated by a number of student-led organizations across the district, for example the Boston Latin School Youth Climate Action Network (YouthCAN) and Recycling Club, the O'Bryant School of Mathematics and Science Recycling & Environmentalism Club, and the Boston Student Advisory Council. Other schools may not have formal student clubs, but have classes advised by teachers who help with energy conservation or recycling, like Brighton High School STRIVE program’s recycling efforts, as previously described.

BPS schools are highly encouraged to register annually with [MassDEP’s THE GREEN TEAM](#). 28 BPS schools, representing 35 BPS teachers, participated as 2020-2021 GREEN TEAM Schools. Blackstone Elementary School was recognized as a 2021 Grand Prize Winner for its school garden efforts. 24 BPS schools, with 27 BPS teachers registered, participated as 2021-2022 GREEN TEAM Schools. Chittick Elementary was recognized as a 2022 Grand Prize Winner for its recycling efforts.

Two BPS schools, Boston Latin School and Boston Green Academy, participated in the Center for Green School’s *Schools as Teaching Tools* pilot. As a result of the pilot: 1) U.S. Green Building Council created a [case study](#) and a [video](#) based on Boston Latin School’s experience with the pilot; 2) The experience was featured in the *Green Schools Catalyst Quarterly* in the article [“Schools as Teaching Tools Lead to Students as Change Agents for a Sustainable Future”](#). 3) The Center for Green Schools launched [Building Learners](#), open for any K-12 school to join.

While schools were closed in SY20-21 to in-person learning, 35+ BPS school gardens were operated by Facilities Management, teacher champions, CitySprouts, Green City Growers, and Growing Resilience. These partners grew, harvested, and donated more than 1400 pounds of produce to Boston families, while ensuring the gardens remained maintained and operational for students and teachers to use once they returned to in-person learning. *The Boston Globe* wrote a [story](#) covering these efforts. The group was awarded the 2021 Massachusetts Secretary’s Award for Excellence in Energy & Environmental Education. The district’s long-range, equity-driven goal, spearheaded by Facilities Management and the STE Department, is to provide hands-on gardening education at all schools. BPS currently has 51 partner-led gardens and 28 Teacher Champion-led gardens, totaling 79 school gardens.

Creating and Enhancing BPS Outdoor Teaching and Learning: To facilitate the use of outdoor learning spaces, Outdoor Teaching and Learning fuses physical space with programming, outreach, and support provided to teachers. The overarching goal is to create accessible, inspirational and healthy landscapes for the school community. To inspire healthy food choices, raised bed gardens and hydroponic growing units are installed. To offer a range of multidisciplinary learning experiences, areas that accommodate small groups and large groups, are thoughtfully placed. Opportunities for experiential learning are woven into the outdoor learning sequence. Native plantings shade the surroundings and bring pollinators and birds to the schoolyard. The BPS schoolyards, in combination with adjacent urban green spaces, create an interconnected network of green spaces, and contribute towards a contiguous urban canopy for native birds and pollinators. Every school is unique. Each landscape is different. Student populations vary with age, culture, and size. To ensure that the learning spaces are relevant, teachers are invited into the design process. First, all teachers are requested to complete a survey of their outdoor teaching and learning preferences. Afterwards, interested teachers are included in each step of the design process from site analysis, conceptual

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design and site design, to the choice and placement of site elements (furniture, lighting, natural materials, planting, etc.).

Pillar 3, Element C: Development of civic engagement knowledge and skills

The Boston Student Advisory Council (BSAC) is a citywide body of student leaders representing their respective high schools. Prior to the COVID-19 pandemic, BSAC was an active voice in addressing climate and sustainability issues citywide and statewide. Examples include 1) Hundreds of BPS students participated in the 2019 Global Climate Strike on September 20, 2019. BSAC co-planned and emceed the Boston City Hall Rally and Boston Strike. For students who remained in school, many teachers acknowledged the strike by teaching climate science as part of the day's lessons; 2) BSAC advocated for carbon neutral buildings in the City of Boston and was invited to speak at and take part in Mayor Walsh's signing of the 2019 Executive Order that all new municipal buildings must be Zero Net Carbon; 3) During the 2020 U.S. Presidential campaign season, BSAC led a #VoteClimate Campaign and hosted 3 weekly drop-in phone banks for volunteers to call voters; 4) When BPS turned to remote learning in spring 2020, the Sustainability, Energy, and Environment Program collaborated with BSAC to create a [resource list](#) for safely celebrating the 50th Anniversary of Earth Day. The list went viral locally and nationally.

BPS STEM Week focuses on "Improving the Health of our City". The curriculum & materials are all connected to climate science and its impact on Boston. BPS STEM also held a Citywide College, Career, and STEM Fair on October 22, 2022, featuring college, career, and technical program representatives, STEM activities, and help with FAFSA.

BPS has 38 outdoor classrooms and [accompanying curricular resources](#) available for teachers and students to use for outdoor teaching and learning. These greenspace assets connect students to nature in an urban environment right in students' schoolyards. BPS also promotes the use of the City of Boston's greenspaces as extensions of the schoolyards. Friends of the Boston Schoolyard, in partnership with the BPS Facilities Management and STE Departments, is growing a network of partnerships with outdoor-education-centered organizations within and around the Boston area, such as Arnold Arboretum, Charles River Watershed Association, and CitySprouts. These community partners are coming together to collaborate and streamline school programming and supports for BPS schools, as many have existing relationships with BPS schools. For example, Boston Nature Center, Thompson Island Outward Bound Center, and Hale Reservation are the three partners hosting the "Rites of Passage" experiences for students in the 7th grade, funded by ESSER. We held the first OTL Partners Convening of 2023 at the Arnold Arboretum of Harvard University on January 5th.

In line with a commitment to equity and environmental justice, deeply valued by BPS students and their families due to their understanding of and personal experiences with inequities and injustices, we use the [Racial Equity Planning Tool \(REPT\)](#), created by BPS in 2017 to analyze how District policies and proposals impact students and communities with the greatest needs. We also use the [Opportunity Index](#), a pioneering tool designed and developed by BPS and the Boston Area Research Initiative (BARI), to measure and quantify schools that serve the highest concentrations of students in need. Facilities Management and Sustainability program examples of using these tools include the implementation of the Drinking Water Initiative and the new ESSER funded school gardens.

If applicable, please indicate any previous environmental or sustainability awards that your organization has received in the past 5 years.

Grants and Special Funding:

- \$17M ESSER funds for additional IAQ and HVAC investments (2023)
- \$15.4M IVAQ Grant from the MA Department of Elementary and Secondary Education (2023)
- \$75,000 Liberty Mutual Climate Resiliency Initiative grant for BPS Schoolyard Green-Up Days with Boston Nature Center (2022)
- \$3.3M ESSER funds for Outdoor Teaching and Learning (2022)
- \$6.7M ESSER funds for Indoor Air Quality Monitoring Initiative (2020)
- \$5,000/year & education support for 5 years, Jet-A-Way/BPS contract funds for BPS Recycling (2021)
- \$10.34M City of Boston Capital Funds for BPS Drinking Water Initiative (2020)
- \$6.215M U.S. EPA Grant - Reduction in Lead Exposure Via Drinking Water for BPS (2020)
- \$10,000 Schneider Electric and ENE Grant for BPS Gardens (2020)
- \$100,000 USDA Farm to School Implementation Grant for Green City Growers and BPS (2019)
- \$10,000/year for 3 years, Capitol Waste Services, Inc./BPS contract funds for BPS Recycling (2018)

Awards and Recognition:

- 2022 Change Agent of the Year for Katherine Walsh from Built Environment Plus (2022)
- MassDEP THE GREEN TEAM Grand Prize for Chittick Elementary School (2022)
- Award for Excellence in Energy and Environmental Education from MA Executive Office of Energy and Environmental Affairs (2021)
- MassDEP THE GREEN TEAM Grand Prize for Blackstone Elementary School (2021)
- Boston Latin School was a recipient of the 2019 Massachusetts Senior School of the Year Award from the National Energy Education Development Project due to BLS YouthCAN's work.
- 2019-2020 School District Scholarship from Center for Green Schools (2019)
- 2019 Henry L. Shattuck Public Service Award awarded to Jeff Lane, BPS Environmental Specialist
- MassDEP THE GREEN TEAM Grand Prize for Ellison-Parks Early Education School (2019)
- Millennials for 100% Renewable Energy for Katherine Walsh from Environment Massachusetts (2019)
- Award for Excellence in Energy and Environmental Education from MA Executive Office of Energy and Environmental Affairs (2019)
- Mayor's Greenovate Award for Climate Leadership for Katherine Walsh from City of Boston (2019)
- Green Ribbon Schools Award for Boston Green Academy from U.S. Department of Education (2019)
- Public Water Systems Awards: STAR-L Award from Massachusetts Department of Environmental Protection (2018)
- MassDEP THE GREEN TEAM Grand Prizes for Joseph Lee K-8 School and Dante Alighieri Montessori School (2018)