HIGHLIGHTS

FROM THE 2022 HONOREES

U.S DEPARTMENT OF EDUCATION
GREEN RIBBON SCHOOLS

U.S. Department of Education Green Ribbon Schools Highlights From the 2022 Honorees

Office of Communications and Outreach

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Introduction

Origins of the U.S. Department of Education Green Ribbon Schools program

In 2011, key leaders from the Campaign for Environmental Literacy, the Center for Green Schools at the U.S. Green Building Council, the National Wildlife Federation, and the Earth Day Network advised some 80 national and state-based nonprofit organizations to request that the U.S. Department of Education (ED) honor schools for their sustainable facilities, health practices, and effective environmental education. The award that evolved from this petition, U.S. Department of Education Green Ribbon Schools (ED-GRS),[1] has had a significant effect on the green school movement and allowed ED a platform to address school facilities, health, and the environment.

These leaders ultimately assisted ED in developing a consensus definition of a green school, featuring what came to be known as the Three Pillars of the award:

> **Pillar One:** reducing environmental impacts, such as waste, water, energy, greenhouse gases, and transportation, encompassing the areas of school facilities, grounds, and operations;
> **Pillar Two:** improving health and wellness by promoting a healthy physical environment (including aspects such as air quality, contaminant control, moisture control, daylighting, pest management, and acoustical and thermal comfort) and student and staff wellness practices (such as healthy school food and outdoor physical activity); and
> **Pillar Three:** offering effective environmental and sustainability education, including civic learning, green careers, and STEM connections.

How the ED-Green Ribbon Schools Recognition Award operates

Going beyond the award requested by stakeholders, ED-GRS has become the federal communications and outreach tool to focus on specific areas that ED had addressed infrequently until its advent. The award has allowed the agency to use its outreach tools to address matters of school facilities, health, and environment by highlighting innovative practices and sharing useful, free resources in these areas, despite limited authority to run grant programs in these realms.

Annually, state education officials voluntarily participate by nominating their top schools, districts, and postsecondary institutions based on their achievement in ED's Three Pillars. Although ED provides some suggestions to state educational agencies to help

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[1] ED's award is called "U.S. Department of Education Green Ribbon Schools" and has "District Sustainability Award" and "Postsecondary Sustainability Award" categories. "Green Ribbon Schools" without the "U.S. Department of Education" is not ED's award, but instead is a separate program overseen by another organization.

them document nominees' work in the Three Pillars, ultimately, states have flexibility in their selection and nomination, as long as they document progress for each nominee in all of the Three Pillars. ED then uses the award to communicate honorees' promising practices and the helpful resources they successfully employ to the nation's schools.

Growth of the Initiative's communications and engagement functions

Over time, ED has added several components to the initial school award, including recognition of school districts, early learning centers, and postsecondary institutions, as well as a state educational agency official's award. The program's outreach also has grown, along with its engagement functions, with a resource website, www.greenstrides.org, and a Green Strides Tour spotlighting clusters of honorees around an annual theme. Green Strides, the outreach and engagement arm of the award, includes a website, a newsletter, and social media to get the word out to schools about the Three Pillars, providing information about free resources, programs, grants, and webinars.

Building on the simple recognition award, ED-GRS has, over time, heard and responded to the need for ED to develop expertise and cultivate external relationships on environment, sustainability, and infrastructure. In this way, the program has also come to serve as ED's voice with federal agencies, work groups, and task forces; advise senior ED officials and policymakers; and respond to stakeholder and public requests on topics related to environment, sustainability, and infrastructure. For the first time, in 2022, that role will be formalized, with the creation of a small Office for Infrastructure and Sustainability. Under current administration priorities, there is a need for ED to address infrastructure and sustainability in schools in a more sustained, formalized, and impactful manner.

This will allow ED to move beyond the award to play a more impactful role in the ongoing effort to ensure equitable access to healthy, safe, sustainable, 21st-century learning environments, especially as these impact performance and achievement of both students and staff, and environmental learning. It will also enable ED to better share the various federal resources for green schools with the public.

U.S. Department of Education Green Ribbon Schools by the numbers

With the 2022 cohort, some 516 schools, 97 districts, and 58 postsecondary institutions have received an ED-GRS award (see Table 1). In this case, higher numbers do not necessarily indicate broader influence. ED-GRS was never intended to certify thousands of schools. Each year, state educational agencies are invited to nominate up to five early learning through 12th grade school or district candidates and one postsecondary institution. These examples allow ED to highlight many innovative practices throughout the country. Institutions – whether school, district, or postsecondary – are eligible to receive this award only once, and award recipients always must state their designation with the year in which they were honored. Once ED has highlighted an institution's practices, it is useful to move on to highlighting other,

diverse examples. Schools nominated from districts that already have won the award should demonstrate achievements above and beyond those previously honored in the district application.

*Table 1. Number of U.S. Department of Education Green Ribbon School honorees by year and type**

Year	Schools	Districts*	Postsecondary*	Total
2012	78	N/A	N/A	78
2013	64	14	N/A	78
2014	48	9	N/A	57
2015	58	9	14	81
2016	47	15	11	73
2017	45	9	9	63
2018	45	6	6	57
2019	35	14	4	53
2020	39	11	5	55
2021	30	5	5	40
2022	27	5	4	36
Total	516	97	58	671

*The District Sustainability Award was added in 2013 and the Postsecondary Award in 2015.

Number of ED-GRS participating states

Despite the exciting efforts ED has highlighted with this recognition award, there is still work to be done to improve school facilities, health, and environmental engagement. Typically, approximately 25 states voluntarily nominate candidates annually for this award (see Table 2). That means that ED does not have a mechanism for highlighting the practices of green schools in the remaining 25 or so states where state educational agencies choose not to nominate.

*Table 2. Number of nominating authorities for U.S. Department of Education Green Ribbon Schools by year**

Year	Number of Participating Nominating Authorities
2012	30
2013	32
2014	30
2015	30
2016	27
2017	29
2018	26
2019	28
2020	27
2021	20
2022	19

*All states, territories, the District of Columbia, the Department of Defense Education Activity, and the Bureau of Indian Education are invited to nominate.

Contributing to the development of a more coherent definition of a green school

A key contribution of the ED-GRS award is believed to be that, to some degree, it has brought various agencies and organizations together around a common definition of a green school. Rather than one organization using the term "green school" to denote an energy-efficient school, another to refer to institutions offering environmental and sustainability learning, and a third to indicate environmental health or wellness practices, there has been a convergence such that a green or sustainable school must encompass all Three Pillars. There continue to be initiatives that focus squarely on one segment of this work; however, it usually is with the stated understanding that they form part of a broader three pillar effort.

A spotlight for school facilities, health, and environment innovations

In 2011, the term "green school" was a relatively unknown concept across much of the country. Today, there is a growing understanding of what this work entails, at least in small part because of ED's efforts annually to illustrate this work with the concrete practices of its honorees and honorees' boots-on-the-ground practices. ED's oversight of this award has offered the agency an opportunity to address and engage on such issues as school infrastructure and operational costs; environmental health and school wellness practices; nutritious, local, and student-grown school food; and hands-on, outdoor, project- and place-based, authentic, environmental, civic, and sustainability learning, among other related topics. The award also has allowed ED to highlight unique local, state, and national partnerships and projects where sustainability efforts intersect with equity.

A significant effect with a limited budget and innovative collaboration

Despite the historical limited availability of funds at ED for school sustainability, the award has facilitated collaborations and connections and disseminated resources. For example, both ED-GRS and Green Strides have enabled ED to share the many programs for schools offered by counterparts at the National Oceanic and Atmospheric Administration; EPA; U.S. departments of Agriculture, Interior, and Energy; and collaborators across the for-profit and nonprofit private sectors.

In the same way that ED works more effectively across a broader range of federal agencies as a result of the award, some state educational agencies also are collaborating in exceptional ways with state health, environment, and energy agencies to select their nominees to ED. The private sector, both for-profit and nonprofit, also has gotten involved at the federal, state, local, and school levels, working with schools and governments. Through this collaboration, ED's recognition award has become a tool to get various parties working better together for the benefit of students across the nation.

Green schools are successfully serving disadvantaged populations

Annually 30% to 55% of ED-GRS honorees have served majority-disadvantaged student populations, as measured by free and reduced-price lunch. While this is in part due to award criteria design, which asks states to ensure that at least one of their nominees is in a disadvantaged community, state nominations have exceeded this minimum requirement. With ED-GRS-designated schools, districts, and postsecondary institutions providing better education to traditionally underserved students, green school practices may be another tool to advance equal access to a quality education for all students.

A green school does not need to be newly constructed

To ensure that the award highlights diverse examples of sustainability, the competition assesses candidates based on resources available to them, rather than in comparison to each other. In fact, the award has, over the years, highlighted many older school constructions engaged in low-cost, but highly effective, retrofits and behavioral change. All of these are steps that any school community can undertake, without a new construction, that is designed specifically to be resource efficient and environmentally healthy. In this way, the award has helped to educate the public about the broad applicability of green school practices in both old and new buildings.

Creating incentives for multiple pipelines for sustainability improvements by all schools

Another important consequence of the award has been the refinement of various national and state-specific green school programs that the award has spurred. States have realigned preexisting state green school programs, created new ones, and now recognize runners-up beyond those they nominate to ED, in order to create pathways to the national award, broaden recognition within individual states, and provide incentives for more change.

The 2022 cohort

This year's selectees were confirmed from a pool of candidates voluntarily nominated and exhaustively reviewed by 19 state education authority implementation teams. While selection processes vary from state to state, members of several state agencies, as well as outside experts, often comprise selection committees. At the federal level, we have selected 27 schools, five districts, and four postsecondary institutions that demonstrate promising practices to cut costs, improve health, and ensure that students learn through the most hands-on, engaging means possible (see Table 3).

Table 3. 2022 honorees by type

Total honorees	**36**
Schools	27
Nonpublic schools	7
Charter schools	2
Magnet schools	4
Districts	5
Institutions of higher education	4
Disadvantaged-serving schools	14

The diversity of U.S. Department of Education Green Ribbon Schools, District Sustainability Awardees, and Postsecondary Sustainability Awardees and the range of their work demonstrates that any school, district, or postsecondary institution can take steps to improve the sustainability, health, and safety of school facilities; ensure nutrition and fitness practices for a lifetime of wellness and productivity; and engage students in real-world learning.

Schools use sustainability in context to teach important civic values and skills that encourage students to grow into responsible, compassionate, and contributing citizens. Furthermore, working with dynamic environmental, social, and economic systems from an early age nurtures precisely the type of thinking, collaboration, and problem-solving skills that careers of the future require. This is the case whether these students graduate from green career and technical programs, college preparatory schools, community colleges, or liberal arts colleges.

This is even more true after a global health pandemic, when all schools have been forced to face issues of school air quality, nutrition, and outdoor learning more directly than ever. Not surprisingly, green schools have been among those best equipped to handle the pandemic, at the ready with outdoor classrooms; updated, efficient, and healthy ventilation systems; social-emotional learning curricula; paperless learning mechanisms; and farm-to-school programs that encourage healthy nutrition, whether at home or on campus.

These green schools still had to get creative during the pandemic, sending “planting packages” home for students to learn horticulture while learning virtually and calling students away from their tablets into their backyard or neighborhood to observe the elements of nature they might have, under more normal circumstances, observed in the green schoolyard. These green schools persisted in their efforts and grew more determined, if possible, as the global health crisis underscored how students and educators require healthy, safe learning environments and how the leaders of tomorrow must understand the impact of their individual actions on their community and their planet.

It is with tremendous pleasure that we present the 2022 U.S. Department of Education Green Ribbon Schools, District Sustainability Awardees, and Postsecondary Sustainability Awardees. These honorees are ensuring that their students learn to live, work, and play with sustainability and health in mind – not as an afterthought, but as an integral part of everything they undertake.

The innovative practices of the 2022 Green Ribbon award winners are described in the remainder of this report. We also suggest that you go to the http://www.greenstrides.org webpage to learn more about these innovative practices.

Director's Award

The Director's Award celebrates an individual's exemplary efforts to administer ED-GRS in their state. Specifically, the ED-GRS Director's Award recognizes a state educational agency official who does the most to advance green schools by running a robust competition process; connecting more schools to resources in all three ED-GRS Pillars; amplifying the stories of honorees; helping schools learn from one another; partnering with a variety of entities to bring more resources and expertise into schools; and exhibiting a dedication to exceptional school facilities, health, and environmental education through activities outside of the administration of ED-GRS.

ED is delighted to have named Jon Long, school architect at the North Carolina Department of Public Instruction, as the 2022 Director's Award recipient.

Mr. Long's leadership and dedication have been integral to ED-GRS' success in North Carolina. He has worked to cultivate applicants in the state by mentoring, exhibiting flexibility, and conducting outreach. Mr. Long hosted the ambitious 2021 Green Strides Tour in North Carolina, despite various pandemic challenges. He has gone above and beyond his stated job description of school architect and worked across traditional silos to make connections among the built and natural environment, green schoolyards, the school as a learning tool, and overall student wellness and academic achievement. Mr. Long dedicates himself wholeheartedly to everything that he undertakes, and ED is grateful to have his example for other states advancing sustainable schools.

2022 U.S. Department of Education Green Ribbon Schools Awards

California

Altamont Creek Elementary School; Livermore, California

In 2015, Altamont Creek Elementary School (ACES) established an initial five-year Sustainability Plan, which provided a framework for addressing energy, solid waste, carbon emissions, water usage, transportation, and the health and safety of staff. The on-site photovoltaic system generates 95% of the school's annual kWh usage. The balance of the school's electrical energy comes from the local utility's renewable choice option. In 2017, ACES developed a model solid waste school program in partnership with the local waste management authority and state grant funding to reduce waste, featuring share tables, waste audits, composting, and local food pantry donations. ACES offers a Safe Routes to School bike rodeo, a bike repair event, and walk and roll to school days, with 70% of students walking or rolling to school daily. ACES established an "Idle Free" zone that applies to all vehicles that come onto the school grounds and switched to all Eco-Logo-certified green cleaning products. Outdoor learning spaces now include a 2,900-square-foot main garden, a certified National Wildlife Federation Wildlife Habitat, a bay-friendly garden, and an Audubon bird habitat. A "Bird Cam" allows students to view bird feeders and the garden from inside the classroom. Students engage in health, place-based environmental science, and nutrition education activities in the school's garden. All staff meetings provide training in mind and body techniques used to release stress and strengthen mindfulness. ACES pilots the Project Lead the Way engineering program for elementary students. They apply STEAM strategies to develop an understanding of environmental topics, such as sun safety, waste management, native plants, and renewable energy. Beyond campus, students visit East Bay Regional Parks, Oakland Zoo, and Altamont Creek. They also participate in coastal cleanups and outdoor science school.

Altamont Creek Elementary School's custodian helps kindergarteners separate waste into recycling, compost, and landfill.

Suisun Valley K-8 School; Fairfield, California
Located in the heart of a viticulture area, Suisun Valley School (SVS) is a K-8 school focusing on agricultural technology. In 2013, the school constructed seven solar classrooms featuring solar tube lighting fixtures that shortened the time needed for electric lighting by 90%, while providing healthier, natural light to occupants. In 2020, SVS applied a cool roof system on all school buildings. SVS has a trench drain, xeriscaping, and drip-irrigation campuswide. Students designed and maintain two 2,500-gallon cistern rain harvester systems that function with solar and wind energy. SVS raises chickens to consume waste and contribute organic fertilizer to the school garden. Together with a student devised and operated on-site composting bin system, a vermiculture program, and city organics pickup, these efforts eliminate the school's waste removal costs. SVS employs a full-time agriscience teacher to oversee the school's two-acre farm, which features a three-tower indoor hydroponic center, an outdoor kitchen classroom, a greenhouse, a quarter-acre of field crops, 104 raised beds, 29 fruit trees, a vineyard, a quarter-acre permaculture guild area, an eighth-acre California native garden section, and seed/cutting production areas. The goal of the agriscience program, in addition to teaching and reinforcing state science standards, is to teach K-8 students the origins of food, how it is grown or produced, and the vital role that agriculture plays in human survival. Each summer, the school's garden becomes a community gathering place and food source where families and local community members are invited to gather fresh produce at no cost. SVS staff coach students in mindfulness practices and engage in weekly yoga. The playground includes mega-sized game boards, extra-large Jenga blocks, and obstacle course items.


Suisun Valley K-8 School's students analyze their compost. Between an on-site compost bin system, vermiculture, chickens, and city organics waste pickup, they have eliminated waste hauling costs.

Katella High School; Anaheim, California
Katella High School (KHS) achieved a 28% reduction in non-transportation energy use from 2016 to 2021 and a 57% reduction in greenhouse gas emissions during the same period. The school replaced all interior and exterior lighting on campus with LED lights, including motion sensing and dimming capability, using a combination of Proposition 39 (California Clean Energy Jobs Act) funding and a city rebate program, which also supported the installation of a high-efficiency chiller and tankless water heaters. Students from Advanced Placement environmental science classes participate in the California Energy Conservation Competition, in which they develop a campaign to promote energy conservation. The campus was redesigned to include native plant species, waterwise irrigation, rain gardens, bioswales, porous pavers, and sanded pathways that collect, filter, and recycle. KHS documents an overall 43% reduction of water consumption from 2016-2022. KHS composts about 50 pounds of food from the cafeteria and culinary classes to enrich the school garden's soil each year. The district

fleet consists of 10 CNG fuel school buses and 12 electric buses, and KHS has fourelectric vehicle charging stations. The school's IPM plan treats pests using the least toxic methods possible. The school's garden and outdoor learning center feature two greenhouses, an aquaponic garden, ten raised plant beds, and an outdoor learning lab with six student-assembled benches. The area serves as a place to extend teaching and learning into context with hands-on activities. Chemistry, physics, and Advanced Placement human geography cover climate change and renewable energy topics, with teachers receiving training from such organizations as Strategic Energy Innovations. KHS connects students with green careers by partnering with the city to offer mentoring in careers, such as urban planning, energy conservation, water conservation, and waste management. KHS sustainability-focused groups include Save the Earth, Recycling Club, Key Club, Garden and Sustainability Club, and a faculty Green Team. Field trips take students to the Bolsa Chica wetlands, Newport Aquatic Center, San Diego Safari Park, and a state fish hatchery.

Katella High School's garden and outdoor learning center feature two greenhouses, an aquaponic garden, 10 raised plant beds, and an outdoor learning lab with six student-assembled benches.

St. Martin of Tours Academy; La Mesa, California

St. Martin of Tours Academy (SMA) is a Catholic elementary school serving 220 students in kindergarten through eighth grade from across San Diego County. Schoolwide learning expectations promote global awareness, concern for social justice, responsiveness to needs within the community, and respect for all of God's creation. In 2015, SMA became the first Catholic elementary school in the nation to be declared a Fair Trade School, offering events and curriculum related to fair trade practices, and replacing products on campus for global sustainability. SMA performs among the top 25% of similar buildings nationwide, based on ENERGY STAR Portfolio Manager benchmarking. SMA invested in a rooftop solar system designed to supply all energy required for the school's operations and participates in net energy metering that exports surplus clean energy to the grid. SMA also installed high-energy performance windows, a water filtration system, and air purification systems. Landscaping on the school campus was replaced with drought tolerant native plants and rocks, reducing water consumption. Grounds feature bioswales, reused tree trunk stump seating, rain barrels, and downspouts that direct rainwater to fruit trees and the organic garden that K-5 classes maintain. Students

At St. Martin of Tours Academy students plant oregano, tomatoes, parsley, peppers, onions, garlic, and basil in the pizza garden.

engage in STEM activities that explore the environment, climate change, sustainability, and ecosystems. They demonstrate their acquisition of subject material by engaging in "real-world" challenges on topics such as agriculture, ocean life, life cycles, building models, and water usage. Eighth grade students participated in a regional SeaPerch challenge, an underwater robotics program that teaches students how to build an underwater remotely operated vehicle. In partnership with the City of La Mesa and their local waste hauler, SMA composts food and yard waste, and students clean up local beach areas twice a year.

Merced Union High School District; Atwater, California

Merced Union High School District (MUHSD) encompasses six comprehensive high schools and two alternative education sites. In 2018, students at each school participated in a districtwide energy conservation competition, creating videos to educate other students about energy conservation. In 2016, MUHSD's Green Technology and Energy Conservation (GTEC) students collaborated with the California Conservation Corps to perform energy audits on all district campuses. Students used data from energy audits to advocate for on-site solar at all seven campuses. The district decided to install solar panels for each school under a power purchase agreement with no upfront cost to the district. The new solar arrays are expected to generate 90% of the district's energy needs and save over $4.5 million during the 28-year contract. More than half of the MUHSD school sites have a composting center and rain barrels. Since asthma is the most common cause of absenteeism in the Central Valley, MUHSD staff work hard to keep buildings clean, dust-free, and humidity-controlled. Custodial staff use low-fragrance cleaning supplies, and yard work, such as mowing and blowing, are done before or after students are present. Each campus has greenhouses and raised bed gardens, with some campuses offering orchards of fruits and nuts. These efforts provide cafeterias with fresh produce, in addition to the eggs raised by Future Farmers of America students. During the pandemic, the district donated produce to rescue missions and food banks. Seven of the 14 course pathways are sustainability related, including agriculture and natural resources; building construction; energy, environment and utilities; engineering and architecture; and transportation. Students in the green technology and energy conservation course construct solar systems for economically distressed households at least four times a year, providing a free solar system that supplies approximately 50-60% of their needs. Students have visited the state capital to advocate for green legislation on water storage development, Central Valley air quality, renewable energy credits, solar energy, and increasing the state mandate to 100% renewable energy.

Four Future Farmers of America students present their sheep at the Merced County Fair.

Connecticut

Charles H. Barrows STEM Academy; Windham, Connecticut

Charles H. Barrows STEM Academy (Barrows) was designed for sustainability and use of the school as a learning tool. The school is a Connecticut Green Leaf School, National Wildlife Habitat, and Monarch Way Station. Sustainable education unfolds in specialized labs and classrooms, outdoor classrooms, raised garden beds, courtyards, walking paths, meadow, marsh area, wetland, and wooded temperate forest. Barrows' oceanography room boasts saltwater and freshwater tanks and leverages NOAA B-Wet grant funding. A new 160-foot greenhouse will extend the growing season and enhance the urban farming curriculum. The campus features swales, ponds, and meadows for field study, after-school activities, and an annual BioBlitz. Using the outdoors as learning labs, from planting window box seeds to managing outdoor gardens, students learn firsthand about alternative energy generation from renewable energy sources. Barrows' food share program helps students facing food insecurity, and composting efforts benefit the garden. An aerogation green wall magnifies the natural purifying properties of plants 200 times. Stormwater management features funnel water down rain chains and into a dry riverbed. All fixtures are low flow and automatic. Barrows designates parking spaces for low-impact vehicles. The school is home to a full-service health center and uses nontoxic cleaning products and MERV-13 filters. Project-based learning provides a real-world context for learning STEM, both outdoor and in classrooms.

At Charles Barrows STEM Academy sustainable education unfolds in specialized labs, outdoor classrooms, courtyards, gardens, meadow, wetland, wooded temperate forest, and a Certified Monarch Waystation.

District of Columbia

J.G. Whittier Elementary School; Washington, District of Columbia

Whittier Elementary School (Whittier) shifted its academic programming to center on STEM, with a focus on urban sustainability. The school STEM coordinator has successfully led the effort to leverage partnerships to develop sustainable systems and practices at Whittier and in the community. Energy-efficient upgrades were made to Whittier's HVAC systems to increase fresh air filtration throughout the building through an existing dedicated outside air system and the installation of high efficiency filters. Whittier uses Green Seal and EcoLogo cleaning products. Whittier's garden projects have ranged from a small pollinator garden and eight garden beds to outdoor classrooms and tree planting. Whittier partners with FRESHFARM to embed comprehensive food education in the curriculum. Green Team members assist in separating waste, recycling, and composting. In physical education, students learn bike safety through a program with the D.C. Department of Transportation. In February 2021, Whittier held its first Sustainability STEM Fair. The school participates in the National Energy Education Development Energizing Student Potential program, which partners with schools to provide fun interactive energy lessons. A restorative practices coordinator provides rewards for good behavior, such as field trips, special events, and extra recess.

A Whittier Elementary School fourth grade class engages in a lesson with partners from Out Teach in one of the school's outdoor classrooms.

American University; Washington, District of Columbia

In 2018, American University (AU) became the first urban campus, first research university, and largest higher education institution in the country to achieve carbon neutrality. American University is home to 10 LEED-certified buildings, several of which feature solar thermal. American University uses both on- and off-campus photovoltaic panels for about 50% of its electricity demand, and the remainder of AU's electricity use is matched with Renewable Energy Credits, so the university operates on 100% green electricity. The campus houses rain gardens, bioretention basins, green roofs, cisterns, rain barrels, and other stormwater management features. AU uses a three-bin system with landfill, compost, and mixed recycling in all campus buildings. The University offers a comprehensive alternative transportation program, including a public transit pass for students, biking program discounts, and electric vehicle charging stations. AU's campus is a certified arboretum, featuring plants from around the world. In 2019-2020, the Office of Sustainability collaborated with the Center for Teaching, Research and Learning to create a Campus Sustainability Lesson Plan that any instructor can use in the classroom. American University has over a dozen sustainability-related clubs on campus, encompassing beekeeping, community garden, outdoors, zero waste, climate and conservation, sustainability, and renewable energy. Nearly 300 courses on campus have been identified as sustainability courses or courses that included sustainability. Thirty-eight of the 50 academic departments at AU include sustainability focused or inclusive courses. AU offers an environmental sustainability and global health concentration, as well as global environmental politics, natural resources and sustainable development, and sustainability management master's degrees. Across its schools, it houses a Center of Environmental Policy and a Center for Environmental Filmmaking. AU's Office of Sustainability administers a sustainability fund, which provides support for campus projects developed and proposed by members of the community.

American University is home to 10 LEED-certified buildings and is the largest higher education institution in the country to achieve carbon neutrality.

Florida

Millennia Gardens Elementary School; Orlando, Florida

In 2016, four teachers at Millennia Gardens Elementary School (MGES) were awarded a grant of $68,000, investing it in establishing a culture of environmental stewardship and forming an Eco Club. The school's quarter-acre wildlife sanctuary is comprised of a National Wildlife Federation designated Monarch Butterfly Waystation, a permitted gopher tortoise habitat, frog pond, osprey perch, two bat houses, and native vegetation. The school building features energy management systems, automatic sensors, water bottle filling stations, as well as efficient electronics and fixtures. Students conduct audits and post reminders to encourage conservation. Students engage in upcycling projects; families leave used clothes at a donation station on-site, and MGES composts food waste and then uses the soil in school gardens. The produce grown by students in the certified organic garden and 50-tower hydroponic garden is used in nutrition education. MGES ensures optimal indoor and outdoor air quality through contaminant testing, regular maintenance, and training. No idling zone designations and bike racks reduce air pollution and promote active transportation. MGES features a running club, cooking classes for families, health screenings, a psychologist, and social-emotional learning. Students participate in an Everglades camping trip, feed Sea World manatees with the lettuce they grow in their hydroponic garden, and participate in Central Florida Earth Day festivities. Fifth grade students convinced City of Orlando's mayor to sign a declaration of climate emergency. After learning about biodiversity, students adopted an emperor penguin chick, green turtle, polar bear, and manatee through the World Wildlife Federation.

Millenia Gardens Elementary School students grow lettuce in 50 hydroponic tower gardens.

Illinois

Urban Prairie Waldorf School; Chicago, Illinois

Urban Prairie Waldorf School (UPWS) is an independent school that serves infants through eighth grade. Over half of UPWS families qualify for the variable tuition program. The curriculum incorporates nature experiences, outdoor movement-based learning, excursions throughout the city, and learning by doing. UPWS's formal environmental sustainability efforts began with the adoption of the school's Sustainability Charter in 2019. The charter built on UPWS's prior sustainability efforts and focused new efforts on reducing the environmental impact and costs of the school's 70-year-old facility. UPWS contracted an energy assessment and retrofitted its lighting in early 2021, leading to a 63% average monthly reduction in electricity consumption

compared to the previous year. UPWS also installed a demonstration solar array in late 2021, providing a context for students to study real-world math concepts. UPWS has developed its campus into a green schoolyard, where students play, plant, harvest, tend to animals, and learn. This included transforming an unshaded asphalt lot with natural climbing structures, a large sand area, a goat habitat, raised earthen berms, and hügelkultur-inspired mounds. All of this provides learning benefits, such as opportunities to explore, get muddy, and conduct experiments in nature, as well as environmental benefits, including reduced stormwater runoff and potable water irrigation needs. UPWS students receive at least an hour of outdoor play each day. Middle schoolers go on regular walking expeditions, sometimes up to 10 miles in a day, with the city as their classroom. Families pack minimal-waste lunches, and about 25% of families participate in a weekly regeneratively farmed produce delivery program. Every class starts the day in games, movement (yoga, folk dancing, poems with movement, developmental exercises) before the teacher brings students to seated learning.

Community High School District 99; Downers Grove, Illinois

Community High School District 99 installed LED lighting in gymnasiums and covers on swimming pools, reducing heating costs by 28% and pools' water consumption by 38%. District 99 has added automatic sensors for lights and fixtures, water bottle refilling stations, and more efficient heating, cooling, and chillers. The SchoolDude Preventative Maintenance Software program is used to maintain efficiency on all systems. Cisterns store rainwater to supply the irrigation system. District 99 powers its electricity usage via Green-E Energy Certified National Wind RECs and has installed demonstration solar panels to enhance student learning opportunities. The district uses certified green cleaning products and pest management services. Mindful mornings, positive behavioral interventions programming, and live plants around the building support educator and student wellness alike. AP environmental science students travel to a water treatment plant, landfill, sustainable business, and energy generating facility. District 99 is restoring community land to native prairie with a natural laboratory for student use. Earth Action Club is dedicated to conservation and environmental education. An Outdoor Environmental Club engages students in outdoor recreation activities, such as camping, hiking, and canoeing. In 2018 and 2019, the science department led an optional, family-funded excursion to Costa Rica to provide the opportunity to see sustainability and biodiversity in action. District 99 partners with Morton Arboretum for research opportunities and internships.

Community High School District 99 students engage in an upcycled art project using recycled bottlecaps to benefit a local charity.

Northwestern University; Evanston, Illinois

Northwestern University (Northwestern), ranked AASHE STARS Gold, is guided by a Strategic Sustainability Plan. In 2020 and 2021, Northwestern became the first university to receive the EPA's ENERGY STAR Sustained Excellence Award. Partnerships with Clearway Energy and Ameresco offer solar projects and infrastructure upgrades for efficiency, while facilitating student learning. All new campus construction is required to meet or exceed LEED Gold certification, and the university already is home to 23 LEED-certified buildings. Northwestern's facilities and grounds include solar panels, electric vehicle charging stations, bioswales and retention basins, and reflective and green roofing. Northwestern is Tree Campus Higher Education and Bike Friendly University certified. Waste reduction efforts include composting. The Outdoors Club organizes kayaking, hiking, and climbing trips, and Norris Outdoors rents camping equipment to students at affordable rates. Northwestern hosts two campus beaches, one of which includes a sailing center that offers sailing, windsurfing, and paddle boarding. The Wild Roots Student Garden, the Plant-it-Purple Graduate Garden, and wildlife habitat gardens provide opportunities for students to spend time outdoors and nourish needy community members. Across all departments, over 100 courses at the graduate and undergraduate levels focus directly on sustainability, with an additional 140+ courses featuring sustainability-related content. Northwestern's Institute for Sustainability and Energy offers interdisciplinary graduate and undergraduate courses in the fields of sustainability and energy. Other departments offer environment- and sustainability-related degrees and certificates, ranging from environmental engineering to environmental policy and culture. Programs, such as the Global Engineering Trek in Sustainability and Chicago Field Studies, give students opportunities to study abroad and/or work in the local community to gain experience in the sustainability field. A Green Office Certification program empowers community members to evaluate and improve their office sustainability practices.

Students, staff, and faculty collaborate to plant trees on Arbor Day in support of Northwestern University's Tree Campus Higher Education Arbor Day Foundation certification.

Kentucky

Cassidy Elementary School; Lexington, Kentucky

Cassidy Elementary School's outdoor classroom includes accessible raised bed gardens, a butterfly habitat, a rain garden, composting, vermiculture, an erosion station, a soil percolation station, and animal tracks and insect exploratory regions. There are sensory, herb, and literature gardens, and a Kentucky native species area. Each year, through the Trout in the Classroom program, students explore ecosystems as they raise trout from eggs to understand their life cycle, water quality, and their local watersheds.

Cassidy Elementary School GEN-EV racing team, comprised of fourth and fifth graders, tries out their new wheels.

Students in Scientists and Engineers Empowering Kids Science Club participate in projects and campaigns to increase energy conservation and awareness. Cassidy was the first school in Fayette County Public Schools to implement the EPA Air Quality Flag Program. Students participate in citizen science, learn about watersheds and macroinvertebrates, and engage in storm drain stenciling. Cassidy teachers attend the Bluegrass Greensource Teacher Environmental Academy to learn about public transportation, energy usage, solar energy, and wastewater treatment. Cassidy participates in the Electric Vehicle STEM Education Project through the University of Kentucky Center for Applied Energy Research. Students at Cassidy learn how electric transportation benefits the environment and human health. The Cassidy Leadership Team collects bottle caps to upcycle into benches. Cassidy receives locally sourced produce, offers a bike and walk to school day, and celebrates an annual Special Needs Awareness Week. A family needs center, school psychologist, occupational therapist, wellness night, and weekend food backpack program look out for the needs of the whole child.

Ascension School; Louisville, Kentucky

Ascension School (Ascension) serves 233 students in prekindergarten through eighth grade. In 2016, Ascension became the first Catholic school in Kentucky to train every faculty member in project-based learning, and the faculty work collaboratively on cross-curricular projects, including planting and maintaining a school garden, composting, and global classrooms. The school installed efficient windows, touchless sink faucets, and water bottle filling stations and encourages students to bring their reusable water bottles to school. The cafeteria uses washable trays, dishes, and utensils to cut down on waste. Eighth grade students are responsible for promoting an idle-free campus. Ascension uses the Whole School, Whole Community, Whole Child model to ensure students' physical and mental health needs are met through physical activity, mindfulness exercises, and school counselor services. At Ascension's "Farm to Tray Café," selections are prepared using fresh ingredients, some from the school garden. Ascension partnered with Louisville Nature Center to establish a certified Monarch Butterfly Waystation, which is used to offer lessons on pollinators and butterfly life

cycles. The school participates in a Journey North Tulip Test Gardens to track the life cycle of tulips and learn about the importance of soil conditions. Through a generous donation, Ascension obtained a beehive and will train middle school students on maintaining it. An after-school Green Club weeds the butterfly garden, assesses how many classroom lights are left on, and collects litter around campus.

Louisiana

Villa Del Rey Creative Sciences and Arts Magnet School; Baton Rouge, Louisiana
Villa Del Rey Creative Sciences and Arts Magnet School (Villa del Rey) is a Title I school where 20-30% of families are classified as food insecure. Recognizing the deep-seated cyclical impacts that school families face, Villa Del Rey and district staff embarked on a mission to implement educational initiatives that would invoke long-term community health and viability. A key driver to removing barriers and cultivating resiliency is a U.S. Department of Education-funded Magnet Schools Assistance Program (MSAP) grant, which has facilitated renewable energy coding courses. Environmental concepts are integrated through diverse curricula offerings and age-appropriate civic engagement opportunities. Villa Del Rey is the only elementary school in the parish to have a dedicated renewable energy lab. There, students explore sustainable energy generation and transference through green micro-gym stationary bikes, while improving their fitness. All staff members attend National Energy Education Development workshops and conferences each year. Project-based learning themes connect alternative energy methods to Louisiana place-based issues like hurricanes and coastal erosion. Students build, maintain, and leverage campus gardens of all shapes and sizes, indoors and out, from tower to container, leveraging sustainable practices to address local food scarcity challenges. They participate in soil preparation, seed planting, cultivation, harvesting, and food preparation, with two mobile kitchens. Through a partnership with Aramark, students conducted a schoolwide energy audit and learned strategies to reduce energy and water consumption. Through various conservation efforts, including rainwater reclamation, awareness campaigns, and the implementation of different water savings policies, Villa del Rey reduced on-campus water consumption by 73% over six years. The student Energy Team conducts biweekly campus walk-throughs and identifies ways to reduce energy consumption.

Villa Del Rey Creative Sciences and Arts Magnet School students plant milkweed to attract Monarch butterflies and promote pollination.

Caddo Parish Magnet High School; Shreveport, Louisiana

At Caddo Parish Magnet High School (Caddo), student green and interact clubs spearhead environmental service and stewardship, including participation in national convenings, education about the UN Sustainable Development Goals, a monthly blog, composting, and cleanup days. Through partnerships with the Louisiana Water Environment Association, Caddo students identify ways to solve water problems. Annually, students engage in Envirothon, a state natural resources agency sponsored event, to demonstrate their knowledge of environmental science and natural resource management. Students use the nearby Coates Bluff Nature Trail and Red River National Wildlife Trail systems for physical activity and grow and harvest produce in the adjoining community garden for use in the cafeteria and neighboring communities. The original 1964 campus buildings have received efficiency upgrades over time, including new thermostats, HVAC systems, and roofs, and the school participates in Cenergistic's energy savings plan. Students engage in the school's energy conservation efforts through programs and activities in Advanced Placement environmental science and Greens Club. Water quality and grounds efforts include student research and construction of stormwater retention areas; the installation of a greenhouse, rain barrels, raised beds, and water bottle filling stations; student water quality monitoring and storm drain marking; and the designation of a National Wildlife Federation Certified Schoolyard Habitat and Monarch Butterfly Waystation. Student landscaping committee members built wire composting bins. The principal picks up coffee grinds from a local Caddo alumna-owned coffee shop, and student volunteers mix shredded paper and coffee grounds to compost. Caddo has a long tradition of hosting "stress relief" picnics every semester during the school day. Extracurricular offerings, from service and stewardship and yoga in the courtyard to knitting club, provide other outlets to relieve student stress.

Caddo Parish Magnet High School students participate in local trash cleanups and water quality monitoring.

Academy of the Sacred Heart; New Orleans, Louisiana

Academy of the Sacred Heart (Sacred Heart) is an all-girls school that serves those age 1 through those in grade 12. The school established the Sustainable Hearts program in 2019 to instill transformative, communitywide action and environmental stewardship. Students engage in composting, gardening, and Ponchartrain beach cleanups and volunteer for nonprofit organizations at home and abroad that promote sustainability. The Innovation Lab promotes design thinking methodology to problem-solving, such as engineering an entirely renewable energy source powered city or researching fast fashion and designing upcycled clothing. Students in the iLab exercise design thinking, empathy, and civic values by participating in social entrepreneurship projects, such as designing campus stormwater management solutions. They study the United Nations Sustainable Development Goals, build birdhouses, make sustainable Mardi Gras decorations, prepare holiday food boxes, and participate in the National Geographic GeoChallenge to take action as champions for people and the planet. Sacred Heart's Digital Media students dedicate 35% of their weekly show to sustainability. Students in environmental science courses study public-owned natural resources, biodiversity and invasive species, and environmental disasters and governmental policies and produce a schoolwide newsletter with concise sustainability lessons. Sacred Heart contracted with Johnson Controls, an energy savings company to implement a phased efficiency program, including audits and upgrades. Renovations to historic structures dating to the 1800s have brought upgraded controls and mechanical systems, water bottle filling stations, as well as container gardens and rainwater collection features. Sacred Heart conducts waste and transportation audits; sponsors various collection drives, from plastic bags and glass to furniture and uniforms; and composts food waste with a local company. The cafeteria offers reusable trays and metal cutlery and contracts with food service that prioritizes the availability of healthy, sustainable choices.

Academy of the Sacred Heart students design a renewable energy-powered city.

Maryland

Crellin Elementary School; Oakland, Maryland

Environmental education and sustainability changes at Crellin Elementary School (CES) began when the school community found historic mining contaminants in the creek behind the school. Not only was CES able to remedy the pollution, but it increased the overall health of the riparian area while creating an outdoor classroom. The environmental education laboratory is an outdoor classroom where students participate in hands-on activities using the wetland, boardwalk, hemlock forest, vernal ponds,

meadows, orchard, and adjacent creek. CES's agriculture program features barns with sheep and hens, with a solar panel to maximize hens' egg production through daylight provision. Cafeteria food waste and animal waste are both composted and then used in the gardens. The greenhouse employs hydroponics systems. Educational opportunities include maintaining a native butterfly garden, developing integrated pest management plans for the garden, building and erecting bird and bat boxes, exploring the riparian area, planting native trees and shrubs, trout rearing and release, and conducting water quality testing. Other outdoor activities that engage students in civics and place-based learning include raking and jumping in leaves, sledding, shoveling snow, fort building, nature walks, wool shearing, and community cleanups. The school acquires local meat through donations for the school lunch program. CES has made efficiency upgrades, including building automation, interior and exterior LED lights, double-paned windows, HVAC, and building envelope, leading to an immediate decrease in energy usage. Low-flow fixtures reduce domestic water consumption, and rain barrels provide water for gardens and barn animals.

The Crellin Elementary School agriculture program features gardens, a greenhouse, hens, and sheep.

Missouri

Principia School; St. Louis, Missouri

Principia is a coeducational day and boarding school grounded in the teachings of Christian Science and serving children from infancy through grade 12. Principia's most recent strategic plan identifies sustainability as a goal "through innovative and active stewardship of its human, ecological, and financial resources." Principia has restored 42 acres of forest and 6 acres of savanna on the school's 360-acre campus. Grounds also feature produce gardens, chicken coops, beehives, nature playscapes, a permaculture orchard, rain gardens, ponds, and native plantings. The school purchases renewable energy, benchmarks utility reduction efforts in Energy STAR Portfolio Manager, incorporates LED lighting and occupancy sensors, participates in a demand response program, and composts. Teachers utilize outdoor resources as authentic learning opportunities in science, language arts, social studies, and math. Students test water quality and soil, re-enact scenes from literature, engage in BioBlitzes, identify trees, gather weather data, turtle track, study macroinvertebrates, tag butterflies, and garden. The Impact Challenge is a schoolwide project in which students at all grade levels choose one of the United Nations Sustainable Development Goals and work to effect change through specific group projects. Principia offers elective courses in field and natural history and in sustainability. After-school sports include gardening and Eco PE, the latter of which involves stewardship projects and using and maintaining the campus' challenge course. The upper school dedicates a week annually to sending its ninth- to 11th-grade students to different parts of the country to partake in Outward Bound wilderness trips. The cafeteria celebrates meatless Mondays.

The School District of University City; University City, Missouri

In 2010 and 2011, The School District of University City (SDUC) constructed two LEED-certified elementary schools. In 2013, it installed demonstration solar panels on six of eight buildings. The district participates in utility rebate incentive programs and has upgraded and retro-commissioned HVAC systems to ensure they work optimally. SDUC eliminated the use of plastic straws and implemented a multistep process to ensure that district assets are reused, repurposed, repaired, or recycled. SDUC installed LED lights, motion-sensored sinks and toilets, water bottle filling stations, rain gardens, and outdoor STEAM labs with composting at every school site. In addition to tending to food gardens with garden facilitators at every site, students at one middle school also care for chickens and tend to bees. The gardens are not only working laboratories to learn about ecosystems, environmental sustainability, and growing food, they also integrate the arts, student service projects, and other outdoor activities that demonstrate the district's commitment to social-emotional learning, trauma-informed schools, and racial equity. The district offers a high school restorative practices class, wellness lounge, and has four trauma specialists, in addition to social workers and nurses at each site. The annual districtwide STEAM Expo highlights and showcases STEAM initiatives, including those with a sustainability focus. A free summer camp facilitates student visits to St. Louis Zoo, the Green Center, St. Louis Science Center, and Forest Park.

Brittany Woods Middle School, in the School District of University City, has its own apiary.

New Jersey

Elms Elementary School; Jackson, New Jersey
Elms Elementary School (EES) features geothermal heating and cooling, LED lighting, new HVAC controls, and improved insulation. Its solar array generates 40% of the school's energy needs, and the school scores 96 on ENERGY STAR Portfolio Manager. EES courtyard rain barrels irrigate the sensory garden and refill the 500-gallon aquaponics system. Students participate in recycling programs, such as Crayola ColorCycle, Trex plastic recycling, and on-site composting, and contribute to a food share table and a local food pantry to reduce waste. All cleaning products are Green Seal certified, and EES implements integrated pest management. Daily inspections by staff ensure that EES controls moisture from leaks, condensation, and excess humidity. The on-site aquaponics system engages students in learning about sustainable farming practices and a balanced ecosystem. Lessons in sustainability and environmental challenges focus on water conservation, plastic accumulation in oceans, pollinator declines, beach erosion, renewable transportation alternatives, invasive species' impacts on wildlife, and global access to clean water. Students participate in Trout in the Classroom, raising eggs and releasing the fingerlings. All grade levels travel on local nature-based field trips, including Cattus Island, Manasquan Reservoir, Jackson Forest Resource Education Center, and Jenkinson's Aquarium.

Elms Elementary students germinate seeds. The on-site aquaponics system engages students in learning about sustainable farming.

Ohio

St. Dominic School; Shaker Heights, Ohio

At St. Dominic School, kindergarten students observe the chicks that they incubated in their classroom.

In 2016, St. Dominic School launched its "Caring for God's Creation" initiative. St. Dominic upgraded all lights to LED bulbs, added light and faucet motion sensors, and installed low-flow fixtures and water bottle filling stations. All students bring reusable water bottles to school each day. The school has regular inspections and an asbestos control plan in place. St. Dominic offers reusable trays, cups, and flatware in the cafeteria, composts food waste with a local contractor, eliminated plastic straws, participates in Crayola ColorCycle and TerraCycle, and organizes a uniform exchange. School lunches incorporate at least 25% locally grown and produced foods. St. Dominic features a robust health curriculum with social-emotional learning classes presented by the school counselor, offers yoga, and encourages students to eat outdoors. In 2015, St. Dominic School was reaccredited with a goal of increasing science, technology, religion, engineering, art, and math, or STREAM, education. In addition to completing the required coursework for each grade, students complete one or more project-based STREAM activities each year. This year, each grade level is focusing on trying to solve problems related to infrastructure in the area. In science classes, students learn how to interact with living things and the environment in ways that promote respect for the earth and all its inhabitants. Students at St. Dominic School participate in service learning at each grade level, including as part of the Earth Ambassadors Club.

Oregon

Queen of Peace Catholic School; Salem, Oregon
Queen of Peace (QPS) earned its Green School Flag certification through Eco-Schools USA, which required the school to follow a rigorous seven-step framework and three pathways, including forming an eco-action team, conducting various audits, creating an "eco-action plan," and creating an "eco-code." Through its many partnerships, QPS installed several gardens on campus, including a hydroponic garden, a pollinator garden, 10 raised beds, blueberry bushes, fruit trees, an in-ground squash garden, and a raspberry garden. Each day, students tend to these gardens by measuring their food waste and adding it to the gardens to supplement the nutrients in the soil. Indoor hydroponic gardens supplement the locally sourced nutrition program. QPS installed energy-efficient windows and purchased a school bus for field trips. The school features water bottle filling stations and timers on bathroom fixtures and outside irrigation systems to reduce water use. The school's maintenance personnel implement integrated pest management, monitor ventilation, and purchase nontoxic cleaning supplies. The environmental education team at QPS constructs place-based outdoor education lessons that integrate No Trace principles, STEM, problem-solving, and exploratory learning. Students engage in citizen science through various water quality monitoring projects, as well as Feederwatch and Globe programs. The QPS One Hundred Hours Outdoors digital badging program offers students a digital badge for every ten hours they spend outside. Students raise salmon and trout and learn about natural resource careers and climate science through work with Oregon Parks and Wildlife and the National Park Service.

Queen of Peace students dissect mussels to learn which physical adaptations help them survive.

Pennsylvania

Spring-Ford Area School District; Royersford, Pennsylvania
Spring-Ford Area School District (SFASD) installed geothermal HVAC systems and new programmable control systems, passed a district energy conservation policy, participates in an energy curtailment demand response program, tracks resource use in ENERGY STAR Portfolio Manager, and entered an energy-savings performance contract. The district installed low-flow bathroom fixtures and water bottle filling stations. SFASD offers walking and biking paths, recycles nearly 50 tons annually, and does not permit vehicle idling. SFASD has adopted 100% Green Seal certified cleaning products,

implements integrated pest management, tests for lead in drinking water, and conducts annual indoor environmental quality inspections. Under the guidance of industry professionals, middle and high school students designed and constructed several improvements to the district's arboretum as well as a courtyard area. An elementary outdoor classroom features a pond, pollinator garden, raised garden beds, shade structures, and a glass mural. Students in grades K-6 take a STEM-based class focusing on the design process and reuse materials as they prototype designs. Green building design and sustainable architecture are also addressed in the Project Lead the Way engineering and architecture program for high school students.

Under the guidance of industry professionals, Spring-Ford Area School District students designed and constructed improvements to the district's arboretum as well as a courtyard area.

Shippensburg University of Pennsylvania; Shippensburg, Pennsylvania

Shippensburg University (SU) has been focused on decreasing carbon emissions and energy usage for more than two decades. Most recently, major infrastructure upgrades, the revitalization of the Center for Land Use and Sustainability, and the 2020 signing of the Second Nature Climate Commitment have accelerated these efforts. Efforts also include recycling, purchasing wind-generated electricity, and establishing the Campus Farm and Community Garden. In 2005, SU was the first Pennsylvania State System of Higher Education institution to conduct a GHG inventory. In 2015, SU decommissioned its steam plant and transitioned to natural gas, reducing the overall greenhouse gas footprint by 29%. Sustainable dining programs include Project Clean Plate, trayless dining, local produce, and vegan options. The Campus Farm donates half of all produce to combat local food insecurity, and SU composts food waste on-site. SU is a Bronze Level Bicycle Friendly Campus. The Art Department collects used vegetable oil from every dining facility on campus to make biodiesel to fuel a student-designed biofuel-run ceramics kiln. Students enrolled in environmental and sustainability programs develop environmental literacy via courses and experiences across several departments and perspectives, including the psychology of sustainability, environmental economics, environmental communication, and conservation biology. In 2017, the university launched a new sustainability major, and, in 2021, SU substantially revised and updated the geoenvironmental science curriculum


Shippensburg University of Pennsylvania's sustainability efforts include establishing a campus farm and community garden. It donates half of all produce to combat local food insecurity, and SU composts food waste on-site.

to more fully integrate course and field experiences in climate science, sustainability, and geotechnology into the curriculum. ShipShape Day is an annual campus and community event focused on cleaning up the community, including the Burd Run stream, where students also monitor water quality.

Rhode Island

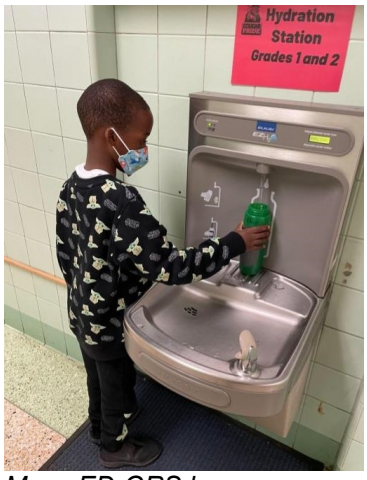
Lincoln High School; Lincoln, Rhode Island

New CTE workshop areas at renovated Lincoln High School provide additional ventilation to protect air quality.

Lincoln High School recently completed a renovation project that overhauled the previous facility and features low-flow and LED fixtures, daylighting, efficient systems, and a modern thermal envelope. The facility is benchmarked in EPA's Portfolio Manager. School grounds include bioretention features, pervious surfaces, and native plantings such that no irrigation is needed. The cafeteria features locally sourced meat and produce, including locally grown apples with an apple-themed menu for an "Apple Crunch" event. Students are encouraged to take their environmental literacy to the next level through the availability of elective courses, such as AP environmental science, marine biology/zoology, as well as design and engineering CTE. Lincoln High School has a required civic responsibility course that includes a community service project for which many students choose to focus on environmental causes. The English curriculum includes units on Transcendentalism and Romanticism, which allows students to reflect upon the role nature plays in individuals' daily lives. The required ninth grade physical science course includes a project-based learning unit called the Urban Heat Project, which culminates with students building and testing a model roof design, with the goal of minimizing urban heat.

Virginia

John B. Cary Elementary School; Richmond, Virginia



Many ED-GRS honorees, including Cary Elementary School, conserve and protect drinking water quality and reduce waste by installing water bottle filling stations.

Less than one mile from the James River in the Chesapeake Bay watershed, John B. Cary Elementary School (Cary) has been named a "RiverWise School," for its environmental education achievements. Cary's interdisciplinary program highlights students' relationship to the bay and environmental justice issues. Its "No Child Left Inside Eco-Campus" encompasses community gardens and a reforestation project that boasts 15,000 square feet of planted area, including 187 native plants, 53 shrubs, 16 trees, and a pollinator garden. Students use the grounds for STEM, art, citizen science, and social-emotional learning during the school day and for gardening, orienteering, biking, and running clubs after school. Cary uses conservation technologies, such as automatic water and lighting shutoff, new boilers, chillers, control systems, water bottle filling stations, and LED lights. It features recycling and composting, the latter of which is then used in the school gardens. The school and its district have improved air quality and contaminant controls through training, regular maintenance, and ongoing monitoring. Cary partners with Greater Richmond Fit4Kids in the Safe Routes to School for five crossing guards to assist students who walk or bike to school and to participate in annual walk and bike to school days. Students develop social-emotional competencies through community circles and a mindfulness room.

Patrick Henry School of Science and Arts; Richmond, Virginia

Patrick Henry School of Science and Arts (PHSSA) has completed major renovations, with features such as LED lighting, motion detectors, touchless sensors, efficient fixtures, interior storm windows, and water bottle filling stations, all while bringing a 100-year-old building into compliance with the Americans with Disabilities Act and preserving the value of a historic structure. PHSSA installed rain barrels to catch runoff from its modular classrooms, which is then used in the butterfly garden, bayscape terrace, and victory gardens. Students design rain barrels, maintain native plantings, and test the impact of their garden filtration system on stormwater runoff. Educators use the various gardens as outdoor classrooms, and a garden

Like many ED-GRS honorees, Patrick Henry School of Science and Arts students engage in yoga, social-emotional learning, positive behavioral supports, and mindfulness to support whole child health and achievement.

committee spearheads planting every year. A compost setup teaches ecology, microbiology, and sustainable agriculture. An annual RiverRomp multisport event features running/hiking, mountain biking, kayaking, orienteering, and team building. Other athletic outlets include climbing, yoga, and Zumba. “Big Life Journals” offer emotional outlets and a “Caught Ya” program celebrates and rewards positive behaviors. As part of a project-based learning curriculum, students focus on current environmental issues and develop real-world solutions to these problems. A local grant helps to support Discovery Fridays, which get students out to the river and park system adjacent to the school to work at the intersection of science, art, and community activism. In addition to this work across traditional disciplines, all students have a weekly environmental studies class.

Washington

La Center High School; La Center, Washington

At La Center High School, the environmental studies class (ESC), which is a multidisciplinary integrated CTE-natural resources class, and the Environmental Action Team (EAT) have been leading efforts since 2008 on environmental sustainability and stewardship. Students have worked with community organizations to study macroinvertebrates, raise and release trout, and monitor water quality in their local watershed. Student-led projects, facilitated by staff and outside partners, continue to be a cornerstone of the effort. For example, ECS built a school garden in 2009 and completed drip irrigation installation in 2011, and each year’s class has taken care of composting, maintenance, planting, cultivation, and harvesting. The garden began as a 1,050-square-foot mixed-used garden and grew to more than 4,000 square feet. It is a source of fresh produce for the school’s cafeteria and local food banks. Food, coffee, and landscape waste fuel compost for the garden. Building on past successes, ESC collaborated with a civil engineering firm to plan additional outdoor learning space, featuring a solar shed and Tesla battery wall. The high school already features a rooftop solar array and rain barrel station. Industrial arts classes have practiced refining biodiesel with local restaurants’ used cooking oil. La Center features a campus challenge course with climbing and ropes, used for building confidence and teamwork. In addition to P.E. and health classes, the ecology, careers in science, environmental studies, and survival of literature classes regularly learn and work together outdoors.

La Center High School features an on-site challenge course that is used for teamwork and confidence building as well as physical education.

Bellingham Public Schools; Bellingham, Washington
Bellingham Public Schools (BPS) is part of Puget Sound Energy's Commercial Strategic Energy Management program, tracks utility use in ENERGY STAR Portfolio Manager, and has transitioned nearly all facilities to direct digital controls. All BPS schools are now built to solar-ready standards, and the district installed a 100 kW solar array at its most recently constructed school. Several schools use rain barrels, cisterns, rain gardens, or green roofs to reclaim water and/or protect water quality. BPS has utilized zero waste practices for over a decade, with all school sites offering food scrap composting. BPS offers free bus passes, Safe Routes to School curriculum and maps, and educational "bike rodeos" to promote alternative transportation. BPS has reimagined its food services program to implement a scratch-cooking model, farm-to-school sourcing, culturally appropriate dishes, and nutrition education. In elementary grades, integrated units of study embed environmental and sustainability goals, with such projects as Salmon in Schools, national parks fieldwork, and garden education. In middle schools, BPS uses a curriculum featuring ecosystems, natural resources, oceans, energy, and climate. Plant systems, a CTE program, allows students to investigate through experiential, hands-on learning. High school students may enroll in environmental science, Advanced Placement environmental science, agriculture hunger, and the environment, ocean science, and sustainable design courses, several of which use local Galbraith Mountain as a learning lab. The district's Promise Tomorrow initiative is an opportunity for teams of students to create positive change on topics such as biodiversity, farming practices, and invasive species.

Wisconsin

Cambridge Elementary School; Cambridge, Wisconsin
Cambridge Elementary School (CES) greets students daily with green space to live, learn, and grow. CES has added more efficient lighting, improved building envelope, and installed rooftop solar photovoltaic panels and solar thermal heating, in addition to purchasing renewable energy sources. Annual bike- and walk-to-school days raise awareness about alternative transportation. All students and staff engage in composting. The school's 40-acre site includes nine acres of woods and three acres of wetlands, which contain native, sustainable vegetation that does not require mowing or irrigation. Water bottle filling stations and automatic sensors conserve water indoors. Physical education classes are held outside, throughout the winter months, with activities like snowshoeing and sledding. Use of the school forest's nature trails is supported by trail guides with mini-lessons and benches for an outdoor classroom. Students have lessons in the school forest, use recess time for walks in the woods, help preserve and restore the school forest, participate in


Cambridge Elementary School features solar panels on the roofs of the pool and library.

environmental and ecology clubs, and support social-emotional wellness by walking through natural areas. Place- and project-based activities allow students to apply specific local knowledge to other places, situations, and environmental conditions. Students learn the joy and hard work of gardening from planting seeds to harvesting the homegrown produce. A farm-to-school Chef in the Classroom program uses student-grown produce to incorporate math, science, language arts, and social studies, in addition to nutrition education. Students work to rid the campus of invasive species and engage in local creek water quality monitoring.

A.E. Burdick School; Milwaukee, Wisconsin

In 2017, A. E. Burdick School began planning and raising funds for a green infrastructure redevelopment project, which was completed in 2019, and included removing 26,600 square feet of impervious surface and replacing it with porous surfaces, such as trees, woodchips, native landscaping, bioswales, and cisterns. The improvements helped to eliminate a buildup of water that accumulated behind the school's greenhouse and return it to the watershed. The outdoor classroom features movable tree cookies, recycled logs and stumps, and Leopold benches. The campus also features food gardens, a "tot lot" for early childhood play, habitat spaces, a school forest, and berry patches. An outdoor discovery cart provides the materials needed to learn outdoors with a quick easy setup. Teachers apply environmental lessons in all areas of the curriculum, with a focus on life sciences, nutrition, horticulture, and environmental studies. Older students discuss more complex processes, such as global warming and decomposition. The surrounding neighborhood benefits from Burdick's urban community greenhouse, where students, teachers, and community members work together to plant, harvest, and prepare foods. In the last 12 months, Burdick has made multiple energy efficiency upgrades, including to its building envelope, kitchen, and office equipment. Burdick employs computer power management settings, thermostat temperature setbacks, hot water temperature set points, and daylighting. Students participate in classroom and garden composting.

Golda Meir School; Milwaukee, Wisconsin

Golda Meir School's active green team has educated stakeholders, installed a new playground, and devised an interactive app to encourage physical activity. The school features automatic water shutoffs, composting, and cooking clubs. A holistic schoolyard redevelopment project replaced 10,060 square feet of asphalt with new green space and mixed-use recreation and educational areas. The redeveloped schoolyard manages stormwater through green infrastructure features, including bioswales, native plantings, a porous turf field, and a 26,600-gallon underground cistern. Green team students are designing a smart recycling bin that senses the appropriateness of the type of material inserted. Flexible seating, fidget toys, and other tools help keep students focused in class. Peer mediation, positive behavioral interventions and supports, restorative justice, yoga, meditation, and a mindfulness curriculum further support wellness and social-emotional health. With specific classes dedicated to sustainability, all students participate in lessons and learn standards related to environmental science and health.

Five outdoor classrooms, gardens, a greenhouse, and an outdoor discovery cart support all classes going outside for at least two hours of learning a day, in addition to recess and organized sports. Classes grow produce and provide it to staff, families, and the community. Learning is enriched by walking field trips and local cleanup projects.

Escuela Verde; Milwaukee, Wisconsin

Escuela Verde is a school founded on ecopedagogy that is constantly striving to live out a vision of creating a just, peaceful, and sustainable future. As a project-based learning school, students explore how science and ecology connect to many other domains. Students choose a topic for their senior thesis projects that they are passionate about and complete a year-long, 300-hour project. Recent topics have involved leading nature hikes and forest bathing; improving health and well-being through biking, camping, mindfulness, and art therapy; organizing neighborhood cleanups; building a chimney swift tower; and distributing bird houses. In 2017, Escuela Verde joined the Milwaukee Better Buildings Challenge and received an energy score of 94. The school has energy efficient windows, lighting, and heating/cooling systems. The school also installed a solar voltaic array on the roof, which offsets about 32% of the school's electrical use. Students were directly involved in the research and installation of the panels and monitor the system. The school's emphasis on food and food justice has led to an entirely vegetarian school lunch. Efforts to reduce waste include composting and the use of cloth towels and mops rather than paper towels. Escuela Verde's guiding curriculum is based on sustainability themes, which have been adapted from The Cloud Institute's Education for Sustainability Standards & Indicators. Each quarter, the advisory curriculum is rooted in one of these sustainability themes. Each winter, staff and students travel to the northern part of the state for a week-long retreat in which students engage in place-based environmental education, including science content, snowshoeing, skiing, and shelter building. In the spring, students participate in a service-learning week, which often includes outside activities, such as invasive species removal or improving the native plant garden and other spaces. At the end of each year, the school offers a weeklong camping trip to a Wisconsin state park.

Escuela Verde students join local nonprofit representatives on morning bird watching walks during their community science program.

Washington Island School; Washington Island, Wisconsin

Eighth graders at Washington Island School learn how to survey and map an area at Percy Johnson Park during one of their monthly forest education days.

Surrounded by the waters of Lake Michigan, Washington Island School is a tiny school with 73 students doing mighty things with limited resources. Two solar arrays provide educational opportunities as well as reduce the school's reliance on fossil fuels. Low-flow, high-efficiency, touchless restroom fixtures help conserve water. Students go outdoors for recess unless it is below 0 degrees Fahrenheit. Students participate in an annual Island Clean-up Day. The school community has worked to curate an interactive school forest and to farm sustainably on adjacent properties. Activities include planting in the orchard and vineyard, grafting and pruning grape vines, and tracking and analyzing data. Most recently, middle and high school students worked in teams to develop plans and a design for a new forest path. Middle school students have been engaged in STEM competitions that focus on developing solutions to real-world sustainability problems. These include the SeaPerch Underwater ROV Challenge; the National Environmental Education Foundation Climate Superstars Challenge; and, before that, the Samsung Solve for Tomorrow Contest, with projects that address ticks passed to humans and invasive aquatic species. Collaboration with the U.S. Fish and Wildlife Service, the Wisconsin Department of Natural Resources, and Monarch Watch afford students citizen scientist opportunities.

University of Wisconsin; Oshkosh, Wisconsin

The University of Wisconsin -- Oshkosh (UWO) uses the Sustainability Indicator Management and Analysis Platform to track and inventory its greenhouse gas emissions, signed Second Nature's Carbon Commitment in 2006, and launched its first Climate Action Plan in 2009. UWO is committed to its goals of LEED Gold certification for new construction projects and LEED Silver certification for renovation projects, with four buildings currently certified Gold and five buildings certified Silver. Other buildings include such features as solar thermal hot water heating, geothermal systems, and photovoltaic arrays. UWO is home to two anaerobic digestion systems, which convert 10,000 tons of yard and food waste per year to electrical energy. Maintenance of grounds includes the use of four 1,000-gallon rain barrel systems, paid for by the student green fund, which collect rainwater for use

At University of Wisconsin – Oshkosh, students obtain hands-on experience conducting water quality monitoring through the school's Environmental Research and Innovation Center.

in watering around campus. The on-campus Environmental Research and Innovation Center leads Wisconsin in Great Lakes beach water quality monitoring. Hands-on internships have students learning various sustainability-related STEM skills, including water quality testing, aquatic invasive species monitoring, well testing, microplastics research, and lab operations. UWO earned a $418,000 grant from the EPA to purchase a trash skimmer boat to target several key waterways that drain into Green Bay and Lake Michigan. UWO's "Harvest Room" produces 33% of the lettuce used in the dining halls as well as growing herbs through 12 tower gardens. All three campuses have earned Tree Campus USA recognition from the Arbor Day Foundation. The Cabinet is the free on-campus student food pantry. The Outdoor Adventure Center offers student-led outdoor activities and trips that combine recreation, sustainability, and education. Sustainability is a general education learning requirement integrated into the University Studies Program. UWO offers environmental studies, environmental engineering technology, and environmental health majors and minors, as well as a sustainable management master's degree and certificate in environmental studies teaching. In 2017, UWO formed the Sustainability Institute for Regional Transformations, which facilitates interdisciplinary sustainability research, supports sustainability education, hosts events, and works to enhance on-campus sustainability using the campus as a living laboratory. Dedicated sustainability grants provide funding to students, faculty, and staff for sustainability research and projects.

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