U.S. DEPARTMENT OF EDUCATION

GreenRibbonSchools

School Nominee Presentation Form

ELIGIBILITY CERTIFICATIONS

School and District's Certifications

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

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

U.S. Department of Education Green Ribbon Schools

☐ Public ☐ Charter ☐ Title I ☐ Magnet ☐ Private ☒ Independent ☐ Rural

Name of Principal: Mr. Robert B. Shaw
(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in the official records)

Official School Name: Mary Institute and Saint Louis Country Day School
(As it should appear on an award)

Official School Name Mailing Address: 101 N. Warson Road St. Louis, MO 63124
(If address is P.O. Box, also include street address.)

County: Saint Louis State School Code Number *: N/A

Telephone: (314) 956-1051 Fax: (314) 995-7470

Web site/URL: https://www.micds.org/ E-mail: info@micds.org

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

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

_____ Date: January 6, 2020
(Principal's Signature)

Name of Superintendent: Mr. Jay Rainey
(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in official records)

District Name: Mary Institute and Saint Louis Country Day School

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

_____ Date: January 6, 2020
(Superintendent's Signature)

Nominating Authority's Certifications

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

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

Name of Nominating Agency:

Name of Nominating Authority:
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.

Kristen McKinney Date: 02.05.2020
(Nominating Authority's Signature)

SUBMISSION

The nomination package, including the signed certifications, narrative summary, documentation of evaluation in the three Pillars, and photos should be submitted online according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509
Expiration Date: March 31, 2021

Public Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required

to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email ICDocketMgr@ed.gov and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.

Mary Institute and Saint Louis Country Day School (MICDS)
St. Louis, MO

Missouri Green Ribbon Schools Nomination Form

School Contact Information

School Name: Mary Institute and Saint Louis Country Day School (MICDS)	Street Address: Address: 101 N. Warson Road Ladue, Mo 63124	
City: Address: 101 N. Warson Road Ladue	State: Mo	Zip: 63124
Website: https://www.micds.org/	Facebook:	
Head of School: Jay Rainey	District: N/A	
HoS Email: jrainey@micds.org	HoS Phone: (314) 993-5100	
Lead Applicant and Position: Robert Shaw JK-12 Science Department Chair		
Lead Applicant Email: rshaw@micds.org	Lead Applicant Phone: 314-995-7469	

School Eligibility and Compliance (put an x by all that apply)

1. The school has some configuration that includes one or more of grades Pre-K-12.	X
2. The school has been evaluated and selected from among schools within the Nominating Authority's jurisdiction as highest achieving in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.	X
3. Neither the nominated public school nor its public school district is refusing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district wide compliance review. The Department of Defense Education Activity (DoDEA) is not subject to the jurisdiction of OCR. The nominated DoDEA schools, however, are subject to and in compliance with statutory and regulatory requirements to comply with Federal civil rights laws.	X

4. OCR has not issued a violation letter of findings to the public school district concluding that the nominated public school or the public school district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.	X
5. The U.S. Department of Justice does not have a pending suit alleging that the public school or the public school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.	X
6. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the public school or public school district in question; or if there are such findings, the state or public school district has corrected, or agreed to correct, the findings.	X
7. The school meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.	X

School Characteristics

Level	School Type	How would you describe your school?	
( ) Early Learning Center ( ) Elementary (PK - 5 or 6) (x) K - 8 (x) Middle (6 - 8 or 9) (x) High (9 or 10 - 12)	( ) Public (x) Private/Independent ( ) Charter ( ) Magnet	( ) Urban (x) Suburban ( ) Rural	Total Enrolled: 1245 Graduation rate: 100% Attendance rate: N/A

Does your school serve 40% or more students from disadvantaged households? ( ) Yes ( ) No

● At MICDS, a substantial need-based financial aid program exists to provide assistance to those families whose financial resources cannot meet all tuition costs. This is a grant program and is not required to be repaid to the School. 25% of our student body receives 100% of demonstrated financial need representing over $5.1M.
● 36% of our student body identifies as students of color.
● Over 65 metro zip codes are represented.
● Over 40 languages and dialects are spoken in our students' homes.

% receiving FRPL:	% limited English proficient:	% total disadvantaged students – **without double counting,** provide the total percentage of students that are receiving FRPL and/or have limited English proficiency, and/or have learning disabilities:
$5.1million was granted to 25% of the student body.	School-wide, over 40 languages and dialects are spoken in our students' homes	Approximately 20% receive support for learning disabilities

Summary Statement

In the wise words of Adventurist Robert Swan, "The greatest threat to our planet is the belief that someone else will save it." At MICDS, we recognize this 'greatest threat,' and as a result, we cherish our duty to craft both an institution and a student body with a better future in mind. Since our inception more than 160 years ago, sustainability has been at the forefront of our school-wide mission. We strive to not only teach our students in an environment that meets our intensive standards but also to produce students that graduate with these same values as a crucial part of their character. In this way, we live up to our mission statement as we recognize that "more than ever our nation needs responsible men and women who can meet the challenges of this world with confidence" all while maintaining a commitment to raise a generation that "must include those who think critically and resolve to stand for what is good and right."

Mary Institute and Saint Louis Country Day School (MICDS) is a JK-12 nonprofit, independent, day school offering non-sectarian education, regardless of national origin, race, or religion. We have three divisions across a 100-acre campus, a Lower School which has 206 pre-K-4th grade students, a Middle School which has 400 5th-8th grade students, and the Upper School, which as 640 9th-12th grade students along with about 100 faculty and staff. All students, faculty, and staff are engaged in and benefit from Sustainable practices at MICDS.

Sustainability is of paramount importance in every sector of our independent school, and our efforts here are carefully guided by the MICDS Sustainability Committee, which is comprised of faculty, staff, parents, and students, all of whom charge us forward on our journey to environmentally responsible initiatives. In doing so, we make certain that each action MICDS embarks upon is in the best interest of a better future, as we recognize and embrace our position as changemakers in not just the St. Louis region, but our ever-growing global presence. As one of only two schools included from the Midwest in the 2012 book Greening America's Schools: The Environmental Sustainability Movement in J-12 Education, Paul Chapman shares captures this insight:

MICD makes it a priority to educate our students and encourage our adults to be conscientious stewards of the environment. We remain committed to ensuring our school's environmental health through the management of resources in order to create the best possible learning environment for current and future students.

This book chapter highlights a comprehensive energy audit, installing synthetic turf to reduce mowing, painting, and runoff from the athletic fields and playgrounds. State of the art smart irrigation for native plantings that only work during drought conditions using collected rainwater, low-VOC paints, lighting, HVAC updates, and energy-efficient window replacements. Moreover, it culminates with an explanation of the Environmental Sustainability Town Hall, where faculty and staff and the surrounding community shared their accomplishments and brainstormed the next steps, including future buildings using sustainable construction materials, techniques, and technologies.

MICDS has pioneered green initiatives in St. Louis, most notably through the opening of our STEM Building and a Center for Community in 2014 and earned LEED-certification on Earth Day in 2015. Both the facilities and the surrounding landscape have multiple features that create learning opportunities for students and increase environmental and fiscal sustainability. Such features include a greenhouse, an orchard, native plantings throughout 50% of the project boundary disturbed by construction, and 98% of all ornamental plantings on campus are native plants. All landscapes consist of either water-efficient or regionally appropriate plants. There are numerous but segmented locations

on campus that host native planting, most common is local prairie grass. All exotic and invasive species are removed and replaced with native plants.

Also, the STEM building boasts a 10,000-gallon rainwater tank and 1,100-gallon day tank that stores greywater. Captured rainwear is filtered with UV light for re-use in drip irrigation in many of our native plant reclamation gardens that border buildings, and the evaporative cooler in the greenhouse effectively reducing overall demand for potable water sewage conveyance by 76%. The filtered rainwater is also used throughout the building in low-flow toilet room fixtures which reduce demand for potable water useage by 64%. The building is meant to set a new standard of sustainability for construction projects at MICDS. It boasts the most substantial rainwater retention, largest permeable pavement installation, most extensive solar thermal array consisting of over 400SF used to generate hot water used for domestic hot water and ventilation air pre/re-heat. The hot water is also connected to the boiler as a pre-heater. MICDS also boasts the largest photo-voltaic array installed on a single school building at the time. The 100,000-kW solar panel array offsets an estimated 13% of the building's electricity at full capacity load, but can be 100% on long sunny days when the load is decreased. The facility will achieve high-energy efficiency through passive solar design, technologically advanced heating and cooling systems, and highly insulating building materials.

Campus-wide, MICDS maintains high-level efficiency standards most significantly from our lighting initiative program that saw a savings of more than $50,000 on our electrical bill. An abundance of natural light in hallways and classrooms of the U-shaped building and CO2 sensors reduce the amount of electricity used for lighting, heating, and cooling. The CO2 sensors in each classroom detect when the space is occupied and when fresh outside air is required. When classrooms are unoccupied the mechanical units turn down to reduce energy consumption. Our many efforts to reduce energy consumption have earned us an 89% Energy Star efficiency rating that we plan to continually improve as we buy exclusively Energy Star rated products. In recent years MICDS has brought online three photo-voltaic arrays totaling 220kW that are fixed on three buildings (one in each division), but most notably, the STEM Building produces more renewable energy than we can use during several summer months.

Over 35% of the STEM Building products include pre-consumer and post-consumer content, reducing the impacts from the extraction and processing of virgin materials and over 50% of this building's materials were sources within 500 miles of the site, thus reducing the impacts from transportation. Changing our waste hauler contract provides an opportunity for our next significant school-wide **student-led** initiative of educating the student body to practice updated recycling, composting, and landfill waste policies and techniques. This is an area where we have an exciting opportunity for growth as it will now be tracked separately and translate into cost savings if done correctly. Some initiatives may take longer to begin because they are student-led, but experience has taught us that student-led initiatives are more sustainable over time, and these lessons stay with students longer than a school policy or program mandate every few years. The oral histories of why we do things become a tradition as much as good citizenship or ecology policy. With a new waste hauler comes new opportunity for students to lead the way.

MICDS puts much time and care into improving the health and wellness of our student body through many different programs and initiatives. Our campus holds several bioswale retention areas, many of which have been outfitted to be used as a place of academic and social gathering. MICDS encourages healthy physical activity through unscripted recess times, ample sports offerings combined with a

2-season high school sports requirement, as well as overachieving state minimums for structured PE. On the nutrition front, MICDS offers many healthy food options monitored by a staff of trained nutritionists. All food is made in small-batch form to eliminate food waste. MICDS hosts biyearly faculty wellness fairs in addition to supplying a full-time wellness and counseling staff for all members of our community.

Because we value graduating environmentally literate individuals, MICDS takes sustainability education very seriously. MICDS has adapted our World Language department to pursue the United Nations Sustainable Development Goals. Throughout our JK-12 curriculum, sustainability is a major concept that is continually built upon through our classrooms, which culminates in a customizable HS learning environment. HS students can pursue AP Environmental Science or regular Environmental Science, amongst other sustainability heavy classes like Human Geography and Sustainable Development courses, which increase student knowledge of global sustainability. Additionally, we offer many science electives, such as the plant science strand, to foster environmentalism in those who seek the next level. MICDS is also willing to adapt to those who want to pursue sustainability beyond the classroom with independent studies on sustainable design, mapping wolf populations in suburban St. Louis, in-depth exploration of the history of U.S. Energy Policy, using automated farming to study soil with a student-built Farmbot, and the study of greenways in the St. Louis region. The curriculum is adaptable to each respective student but ensures consistent retention of meaningful content.

Some content connects all divisions. The Mars Farm project partnered with Mars Farm Inc, a local startup company to develop instructions to build and deploy growth chambers. Upper School students physically built five growth chambers, programed Arduino microcomputers to control lights and fans, and wired Raspberry Pi microcomputers to remotely capture temperature, humidity, and photographs of the plants as they grow. The Upper School students trained the Middle School students who served as the 'Astronauts on Mars' that physically measure the plant leaves, root mass, pH of hydroponic liquid, and communicate with the Upper School students 'back on Earth.' After the plants matured, the plants are shipped to the Upper School where they are prepared for taste testing with Lower School students. All construction, programming, training, communication, and testing was done by students in each division with minimal oversight from adults. Each of the five biochambers had a different protocol and experimental design, so students were exposed to a great deal of plant science, computer science, environmental science, and scientific endeavor during the Mars Farm project. This successful plant science project will be submitted for publication to several science journals over the summer.

The school has numerous additional spaces explicitly devoted to socially beneficial uses. The STEM Building courtyard and patio provide room for conversation and outdoor games. The middle school lunch grounds were renovated to foster engagement, and the library courtyard encourages outdoor learning and conversation. Brauer Hall is used for conferences, public viewing of documentaries, student work, and as a venue local institutions such as the Missouri Botanical Garden and the Deer Creek Watershed Alliance to host public meetings and expert speaker events. Updates to sporting stadiums also provide an opportunity for community engagement to the social atmosphere. MICDS also has butterfly gardens, bird observation areas, a tree nursery, ongoing work at a honeysuckle abatement area, and sidewalks meandering through habitats and bioswales to foster learning experiences.

MICDS refuses to sit idly by and let others handle a challenge we know is a necessary global effort. We do our part, no matter how small, to tip the balance back and prepare for a better future. We

recognize our leadership status in a suburban area and take our role very seriously when it comes to educating the broader population in our advanced facilities. We are honored to be a part of a nationally recognized effort doing good in an area of the world many see as challenging. Our part may be small, but our future has never looked better, greener.

Engagement, Benchmarking, and Recognition

List the members of the team that helped prepare documentation and their role in the school:

- Robert Shaw - Chair of JK-12 Science Department
- Kevin Hava - Upper School Science Teacher
- Alex Hutton - Student (Class of 2020)
- Dean Sliney - Student (Class of 2020)
- Bob Jett - Director of Facilities
- Eric Lay - Head Athletic Trainer

List any programs you are currently using to benchmark your progress in sustainability:

- Energy Star Portfolio Manager for utility consumption/reduction efforts
- Ameren Pure Power and other utility statements
- Lucid STEM Building Dashboard: Monitoring energy production and consumption, natural gas consumption, and rainwater collection.
- Trash, Recycling, and Compost hauler statements and records

List any recognition, awards, or grants you have received in the last five years related to your efforts in any of the pillars:

- 2012 Chapter highlighting MICDS in Greening America's Schools. MICDS was one of 50 case studies and the only Midwestern school featured in the book. [Pillars 1-3]
  - Chapman, P. (2012). *Greening America's Schools: The Environmental Sustainability Movement in K-12 Schools.* Washington: NAIS. [Pillar 1-3]
- 2015 LEED Platinum Certification: United States Green Building Council [Pillars 1-3]
- 2015 Construction Industry Best Practice Award by the St. Louis Council of Construction Consumers [Pillar 1]
- 2015 Best Project of the Year Award by Engineering News-Record [Pillar 1]
- 2015 Heroes of the Planet: Saint Louis Business Journal [Pillars 1-3]
- 2016 Keystone Award: Associated General Contractors of St. Louis [Pillar 1]
- 2016 Growing Green Award -Education: Missouri Gateway Chapter of USBC [Pillars 1-3]
- 2018 Best Places to Work: Saint Louis Post Dispatch [Pillar 2]
- 2018 Missouri Botanical Garden Education Mission Council: Shaw named to MBG Strategic Plan Committee [Pillars 1-3]
- 2019 Three students earn Solutions for Future Earth Award: Molecular Frontiers Journal [Pillar 3]
- 2019 STEM Leadership: Sustainability Exemplar: Washington University STEM pact [Pillar 3]

List any Future Goals:

- We aim to reinvigorate our Recycling Education Program with the help of a new provider.
- We strive to have students take over the Energy Star program to keep it updated more frequently
- We are continuing a lighting initiative to replace old fixtures with LED bulbs to reduce energy consumption across campus.
- Research on-site production of Biodiesel for campus vehicles by a student-led group

Pillar 1: Sustainability- Reduced Environmental Impact and Costs

Energy and Greenhouse Gases

● To track energy and greenhouse gas emissions, MICDS currently uses the Energy Star Portfolio Manager. We have achieved an Energy Star Certification through these efforts. Our efficiency rating is 89%, and we are continually working to improve this rating across campus further.
● MICDS derives energy from on-campus solar arrays, which are located on our STEM building as well as our sizeable athletic center (MAC). Due to a large number of bills received each month, Energy Star has not been completely updated in the last year to provide a complete picture of energy reduction efforts. This gap is one of our main goals to fill. Despite the lack of detailed data, we have observed an annual savings of $50,000 in electricity due to our lighting initiative.
● To limit energy consumption and lower GHG emissions, MICDS purchases all Energy Star Qualified products. Efficiency ratings are always a primary concern when replacing facility equipment.

Water

● The baseline for water is taken by utility company meters. Irrigation water is managed through a series of sub-meters so we can continuously monitor and determine if leaks are present. Also, irrigation practices are tied into rain gauges to prevent overwatering. It is difficult to measure exact savings, as water usage is based on seasonal weather as well as the frequency of sporting events. Domestic water usage has experienced historic savings in the STEM building, as all greywater used in flush restroom fixtures and the evaporative cooler in the greenhouse use water from storm runoff. In addition, throughout campus renovations, buildings are fitted with low-flow fixtures to save water consumption.
● The school manages season changes through the operation or shut off of the irrigation system. Depending upon the weather, the irrigation system is in operation from March through October. Within these months, the climate is the most prevalent deciding factor on the irrigation schedule. The entire system is tied into rain gauges to prevent overwater while still ensuring the desired soil saturation is maintained. Soil conditions vary across campus, depending upon what sport is played on the grounds, but in general, application to the sports field varies depending upon the frequency of events. Aiding the reduction of mowing and watering, turf fields have been installed in a few renovations. Drip irrigation has also been implemented through landscaping beds to aid the native plants in establishing a root base. Once these plants have matured for a few growing seasons, the drip irrigation system is turned off. Irrigation has been eliminated in some areas, including a steep 0.5-acre hillside North of parking lot A as it has been seeded with drought-resistant prairie ground cover, which eliminates irrigation, runoff, and dangerous mowing conditions.
● Harvested rainwater from roofs is used primarily as grey water in the STEM Building. This water is collected in a large tank underground. There is a new system of rain collection being considered to feed the water turf recently installed for the new field hockey field.
● All insecticides, herbicides, and fertilizers have been converted to organic or have a water runoff safe seal. In some instances, natural herbicides have been applied with a paintbrush instead of a sprayer to ensure contact with an invasive such as honeysuckle stumps and not with the ground, especially in areas near creek runoff. Also, a purple color dye is added to the solution to ensure any spills are cleaned up, and students are trained not to touch the stumps ‘painted’ purple as they are herbicide directly applied to the plant stem and root. Many of the Grounds Department staff have attended training in sustainable horticulture, native vs. non-native plant identification from landscape architects, greenhouse propagation of native plants from our campus seeds, and organic chemical handling. These campus grounds improvements reduce time riding a mower from over 40 times each year to

approximately 22 instances of mowing. Now these skilled landscapers spend the balance of that time designing and maintaining planted beds and wildflower meadows.

School Grounds

● MICDS hosts numerous grounds explicitly devoted to these environmental features allowing students to see and use them throughout the year. MICDS has several bio-retention ponds to handle excess storm water. These ponds are designed with habitat development in mind. In addition, there are several outdoor classroom spaces built into campus to provide both social and ecological uses. Students sit on stone or wood benches that form a natural amphitheater that satisfies many teaching approaches. They serve as stages for planned and impromptu student performances, field study classrooms, and demonstration areas. These classrooms border the creek to the West, Lower School playground in the middle of campus, Middle School science wing on South campus, and an expansive 5.84-acre bioswale runs parallel to the frontage road on the Eastern portion of campus and is available to public pedestrians, students, and families traveling the sidewalk along Warson road. It is not uncommon for baby strollers and bicycles to be parked at the classroom site and see residents and campus visitors getting a close look at the native plants from the footbridge. Four bioswales are totaling approximately eight acres that feature different plants, landforms, watershed characteristics, and habitats on campus, which also serve as teaching sites, though only one has seating. With Deer Creek running through campus, vegetation and mature trees provide a buffer to the stream as well as provide erosion control to its banks. Over 10,000 SF of the upper school parking lot incorporates permeable pavers to prevent excessive runoff, as well as a naturalized hillsides and fens.
● The school has numerous additional spaces explicitly devoted to socially beneficial uses. The Stem courtyard and patio provide room for conversation and outdoor games. The middle school lunch grounds were renovated to foster engagement, library courtyard for outdoor learning and conversation, as well as updates to sporting stadiums (O'Hara), which provide an opportunity for community engagement to the social atmosphere. MICDS also has butterfly gardens, a tree nursery, ongoing work at a honeysuckle abatement area, and sidewalks meandering through habitats and bioswales to foster learning experiences.
● All landscapes consist of either water-efficient or regionally appropriate plants. There are numerous but segmented locations on campus that host native planting, most common is local prairie grass. All exotic and invasive species are removed and replaced with native plants.

Waste

● We have a diversion report, which provides quantities for the amount of waste that is differed from the landfill. The waste from the STEM Building construction diverted 90% of waste from landfills. We are currently diverting over eight of every ten pounds of waste from landfills and aspire to become a zero-waste school where nine of every ten pounds of waste is diverted. MICDS follows all state guidelines for electronic and universal waste. There are several e-recycling drives a year, most commonly used batteries, which are then disposed of properly. Due to a change in recycling providers, there is not a solid record of the amount recycled per week. The process has begun to host a brief reminder campaign to the student body to not mix recyclables with non-recyclables, which is a source of waste not diverted from landfills. There have been problems with past recycling bins being discarded into the trash by the provider due to contamination with non-recyclable items. Only education from our Sustainable Futures Club and support from the student body will eliminate cross-contamination and improve our recycling quality and quantity. Students will also train the janitorial staff about these new waste hauler guidelines before the end of this school year.

Transportation

● Since MICDS is a private institution, there is no bus transportation system present at the school. The student body is simply too spread out to make this a viable option for reducing transportation emissions. Due to these distances traveled, there are also limited options for bicycle storage on campus. Instead, MICDS looks to promote responsible habits with single-passenger vehicles. There are many spots on campus restricted solely to low-emissions vehicles.

Purchasing/Sourcing

● MICDS does use recycled office paper. Our leading paper supplier is Pedro's Planet, which is solely dedicated to environmentally responsible paper production and recycling.

● MICDS is committed to using all environmentally safe Green Seal Certified cleaning products. In addition to the products used, all housekeeping staff is trained in proper cleaning techniques and how to use each product efficiently.

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

Water Sources: MICDS does not acquire any potable water from its well. All potable water is purchased through county supply/provider Missouri American Water. The school does not do any additional testing on purchased water for lead or other contaminants. All drinking fountain filters are replaced regularly and are cleaned by housekeeping to prevent any build-up of bacteria or particulates.

Pest Management: MICDS relies on the services of Terminix pest solutions

Air Quality:

● MICDS utilizes several building automation systems (BAS) to maintain air temperature and quality. HVAC systems are cleaned and maintained to prevent particle build-up. Included with the BAS are humidifiers to add moisture to circulated air when required.

Our school currently does not have an anti-idling policy; however, it is being discussed; the main obstacle being lower and middle school carpool lines in the afternoon. The school has taken other steps to reduce airborne pollutants through the conversion of two security vehicles with electric engines instead of gas. Ten diesel maintenance carts will be converted to run on Biodiesel, which is in being produced by Upper School students in collaboration with Flik food services. Also, the amount of field mows per year has been reduced by almost 50% in the last five years, limiting the amount of emissions originating from campus.

Mold and Moisture: Downspout drainage is maintained through proper grade that leads to bioswales or other water collectors. Stem building collects this water for non-potable uses. There are no regulated quarterly inspections for mold or water leakage. However, the careful cleaning process of MICDS housekeeping allows for daily inspection of most of the school's square footage. If a problem is detected, maintenance requests are submitted to facilities and are handled appropriately. Besides, the roof and any ceiling tiles are checked for discoloration or other evidence of leakage.

Tobacco Policy: MICDS is a non-smoke, tobacco-free campus. Signage is positioned throughout the campus. The tobacco-free campus covers both smokeless and smoking tobacco products (includes vaping).

PE and Student Activity:

● JK-4, students have 30 minutes of physical education per day/150 minutes per week, as recommended by the Society of Health and Physical Educators (SHAPE) America. Also, grades JK-4 students have an additional 30-45 minutes of recess time per day.
● For grades 5-8, students have 45 minutes of physical education per day/225 minutes per week. SHAPE America recommends 225 minutes of physical activity per week. Also, for grades 5-8, students have 20 minutes of recess per day.
● For grades 9-12, we do not offer physical education classes, but we do have required physical activity through sport and fitness activities. The minimum requirement for a fitness activity is 160 minutes per week of physical activity during at least two of the three-sport seasons. More than 80% of students participate in athletics. At a minimum, an average week of physical activity for a student on an athletic team is 450 minutes. The courtyard, walking paths, extensive trails near the wooded creek provide additional recreational areas for impromptu and organized games as well as quiet reflection.
● For grades JK-6, recess is outdoors. During the fall and spring, a majority of the physical education classes are outdoors. Several advisory periods take place outdoors as well as a two-day camping trip in 6th and 7th grades. Several Science class periods require (directed) outdoor activity several times each school year.

Health Education: The physical education curriculum incorporates many of the National Health Education Standards into student assessments. For grades 5-8, the National Council for Alcohol and Drug Awareness (NCADA) comes on campus and teaches 3-4 lessons. MS Science includes several health education concepts through life science and biology topics, including infectious disease, cancer, nutrition, etc. Our MS and US Advisory programs include many mental and social health awareness activities. The MICDS Food Service (FLIK) provides Healthy Plate (formerly food pyramid) lessons to 2nd, 4th, and 6th graders and healthy eating information to all grades through literature, demonstration, and direct teaching once or twice each year. Outdoor

Safety Education: We do not have a formal outdoor safety education class. However, the contents are intertwined in the course curriculum. Stream and insect safety, as well as outdoor identification of invasive (Honeysuckle) and nuisance plants (Poison Ivy/Poison Oak and thorny plants on campus) as well as the Sun Safety program from the CDC and US Forest Service, is provided to all sixth graders. Also, tree and native plant identification, bird identification, and stream invertebrates are part of various Environmental Courses in the LS, MS, and US.
Employee Health Program: MICDS offers early morning swimming, yoga, dance fitness, and group strength workouts for a minimal fee. Besides, faculty and staff can use the fitness center at any time and has several internal competitive ‘walking challenges’ encouraging faculty to compete for prizes. During professional development time, all faculty attend the MICDS Wellness Fair every other year with sessions by internal and external presenters and vendors. MICDS provides flu shots free of charge each year in October.

Nutrition:
● MICDS utilizes FLIK dining for all food preparation. FLIK food service provides professionally trained nutritionists that design meals as well as educational campaigns for the lunchroom. Signage is located throughout the lunchroom about a balanced diet, superfoods, and other nutritional information. Flik dining services were chosen for MICDS because they provide single-serve meal preparation. They do not prepare significant bulk food before each lunch period. This tremendously cuts down on excess food waste and the corresponding costs. In addition, they source food locally when available. MICDS does have a garden in the lower school garden and year-round in a hydroponic Tower Garden and

incorporated into meals in the Lower School cafeteria whenever possible. All food waste in each division is composted, so no additional packaging (single-serve cream cheese containers or crackers) are served. All dining halls have a salad and soup station for faculty and students. Trays have been eliminated for daily use, reducing hot water, chemical sanitizer use, and controls portion sizes that can cause obesity. Hormone-free milk is used in all dining halls. Only healthy snacks are available in the vending machines (no soda or sweets).

● In addition to FLIK lunch services, healthy foods are available to students throughout the school day. The campus store provides plentiful options for food and drink, a vending machine with healthy snacks are present in both middle and upper school (soda cannot be purchased through vending machines or bookstore), and all sporting events have access to concession stands which offer fruit and healthy snacks such as cheese sticks and oatmeal. Flik provides healthy afternoon snacks (fruit, sun chips, etc.) for Lower School students in their homerooms. Snacks are available to all Middle and Upper School students as well but focused on those remaining on campus either for athletics or other curricular and extracurricular activities.

Physical Threats to Safety:

● MICDS has a full-time campus security staff. Campus security handles personal safety, traffic control, emergency coordination and response, and building combination pin lockage. A night crew remains on campus to ensure constant campus security. Aside from campus security, personal safety is a top priority and practiced regularly with intruder, tornado, earthquake, and fire drills. These responses are guided by written response plans available in each occupied area as well as trained personnel. Each activity is coordinated with Ladue emergency response services, either police or fire. All outside doors require a passcode or faculty/staff ID to enter. MICDS uses security cameras in parking lots and inside some buildings.

● All faculty and staff are fingerprinted and must pass a background check as a condition of employment. All faculty and staff are fingerprinted and go through a background check every 3-5 years upon employment.

On-site health services:

● MICDS has numerous levels of authority and staff to handle health problems. Throughout the school day, each section of the campus has a full-time nurse to look after student health. Also, each portion of the campus is supplied with AED and other medical devices in case of an emergency. Signage is prevalent, particularly in gender-specific bathrooms, to bring awareness to potential physical or mental health issues. MICDS also has a full-time student wellness staff, consisting of academic and mental health counselors.

● After school, MICDS employs two full-time athletic trainers to look after athletic games, practices, and competitions. The trainers are available immediately after school for personal injury care and rehabilitation. Each trainer then makes rotations through practice and competitions but is available by a call to respond to emergencies. Each head coach is required by MSHAA to be CPR and first aid certified, but both are National Athletic Trainer Association Board of Certification. All coaching and athletic training staff have received training through ImPACT sponsored by the Center for Disease Control. All contact sports have concussion reduction helmets, and each athlete completes a baseline assessment before the season for use in the event of head to head or head to ground contact as well as protocols in place for aftercare by various school faculty and student services (school nurse, advisors, teachers, etc.).

● All faculty and staff are CPR trained and take online training for Blood Borne Pathogens, Basic First Aid, Detecting/Reporting Abuse, Detecting/Reporting Depression and Students at Risk for Suicide,

and trip/climbing hazards. Science faculty take Lab Safety and Chemical Storage training every other year. Some faculty and staff have additional training. EMS has trained some students as First Responders through a Saturday program hosted at MICDS.
● All faculty are trained to use the 'Field Trip First Aid Kit,' which includes items specific to students in their charge, including epi-pens, prescribed medications, CPR one-way valves, and various wound dressings.

Mental Health Program:
● MICDS employs a full-time mental health team, which consists of academic specialists and therapists. This team works to keep students updated on mental health issues, as well as solutions to these problems. A focus is placed on additional stress during exam periods in an attempt to aid students' quality of life when under immense workloads. If a student ever wishes to consult a counselor, they are always in their office and available to talk as well as schedule follow up visits.
● The same services are available to teachers as well as an off-site program through Care and Counselling, which provides several visits to a counselor free of charge. MICDS also offers wellness and stress relief programs through mindfulness and stress relief dog visits throughout the year.

Health tracking: MICDS collects and logs all health forms before the school year. This physical form is required to attend that school year, which includes updated health records (vaccinations, medications, allergies, etc.) and emergency contact information for parents and family physicians. MICDS provides two in-service pieces of training regarding health and safety policies and insurance information regarding health benefits, exercise programs, prescription services, and long-term care information as well as future retirement and ongoing benefits.

Pillar 3: Learning - Effective Environmental and Sustainability Education

Environmental Literacy
● We do not have a written environmental literacy graduation requirement. However, several required courses integrate water quality, carbon sequestration, green chemistry practices as well as other sustainability education aspects as part of the JK-12 curriculum. Recently the JK-12 World Language Department has launched a curriculum aligned with the UN Sustainable Development Goals. Working with Inspire Citizens MICDS is hosting a Global Leadership Institute that focuses on sustainable development and systemic transformation through leadership, collaboration, and community engagement. The History (AP Human Geography course) and Science Department (Sustainable Development courses) are collaborating with this effort with the World Language Department taking the lead across all grade-levels.
● Each Junior Kindergarten through 12th-grade science course has connections to environmental factors such as pollution and measurement of pollution, ecosystems, climate change, green energy, and other biogeosphere topics.
● There are several benchmark grades where there is an intentional focus on environmental literacy and sustainability. For instance, the lower school covers these topics in each grade, and 5th and 6th grade in the Middle School builds on these topics significantly through the study of biomes, ecology, weather, and climate. Lower School students learn about and plant trees, then identify its GPS location for future study after sixth graders clear invasive Honeysuckle. Students are taught to identify and remove invasive Honeysuckle, complete Level 1 Stream Team monitoring, and interpret weather

indicators and climate change. Some 9th and 10th-grade environmental literacy topics include an introduction to green Chemistry, water chemistry (Stream Team Level 2), student-built water purification apparatus, and alternative energies (physics of wind turbines, hydroelectric dams, photo-voltaic and nuclear energy) in the Chemical and Physical Systems course in 9th grade. A campus-wide carbon sequestration project where students calculate Carbon in trees as part of the Biochemistry Applications course in 10th grade. Students make publishable infographics showing the change in the location of Carbon over time. All topics are covered with a required Environmental Science or AP Biology, AP Chemistry or AP Environmental Science course as the third year of science. Increasingly there are more students taking topics such as Animal Behavior, Geology and Biodiversity, Interconnectivity, Community & Ecology, Marine Biology, Sustainable Development, and the Plant Science Strand, which also cover environmental literacy.

● There are also student-led clubs that address environmental literacy. The Middle School Biogeosphere Club (19 members) meets after school every other week to plan reduction drives (reduce printing), recycling drives (batteries, expo markers, etc.), and reuse projects in the art rooms and maker spaces. The Upper School Biogeosphere Club (22 members), Sustainable Futures (15 members), student groups meet during Activities Period at least once a week. This year a Greta Thunberg-inspired group self-organized without a faculty mentor to host 'walkouts' and share climate action information each Friday morning before school begins (35+ members built around eight core members). These acts of protests are entirely student-led, though several faculty support this and other student-organized groups from a distance and with knowing nods as not to discourage their activism. This group spun off the Anthropocene Movie Night group (12 members) that wanted to show a documentary film of human impact on the Earth. Students secured the film, the rights to show it, and did all the promotion. The last club is the Blue Whale Cafe event in February, where students share their talents (garage band, singing, dramatic readings, etc.). Students are invited to create logos each year, and students vote for their top choice. The admission fee to this high school dance-type event goes toward environmental causes such as the MICDS Tree Nursery, Greenpeace, or in this case, the Australian Wildfire Relief.

<u>STEM learning connected with the environment</u>

● Often projects in math (statistics), Maker, and technology simulations connect with environmental topics and issues, including climate change, evolution, change over time, ecosystems, and the Sustainable Development Goals.

● Most grade levels cover these topics as part of environmental literacy and careers in science and green careers such as renewable energy, engineering, etc. We coordinate several guests each year to speak with the entire Middle School and Upper School student body. Recently, we have hosted Dr. Jeff Gordon and his research associates, who are working with the Gates Foundation to end world hunger. Jim Jenkins, a cattle rancher from Nebraska that sustainably managed 6000-acre grass-fed cattle ranch, and several individuals ranging from patent law to plant and soil scientists, and climate scientists, and global activists have not only visited as guest speakers, but each has time in classrooms to teach and inspire students with every visit. In February, KK DuVivier (MICDS Class of '71), who teaches energy and alternative energy policy at the University of Denver, will receive an Alumni Award and spend the day teaching in AP Environmental and our Environmental Science classes. These speakers have inspired several students to see Independent Study courses here at MICDS and university degree programs that pertain to these areas, including the students that submitted this report.

<u>AP Environmental Science</u>

● MICDS does offer AP Environmental Science, which approximately 20% of the student body takes before graduation, as well as Environmental Science (another 13% of the student body) and Plant

Science strand (an additional 10% of the student body) of classes. Many topics are also covered in grade-level courses that every student experiences, including a large carbon sequestration project in 10th-grade Biochemistry, and a water filter project in 9th-grade
Chemical and Physical Systems classes.

Certifications in Green Curricula

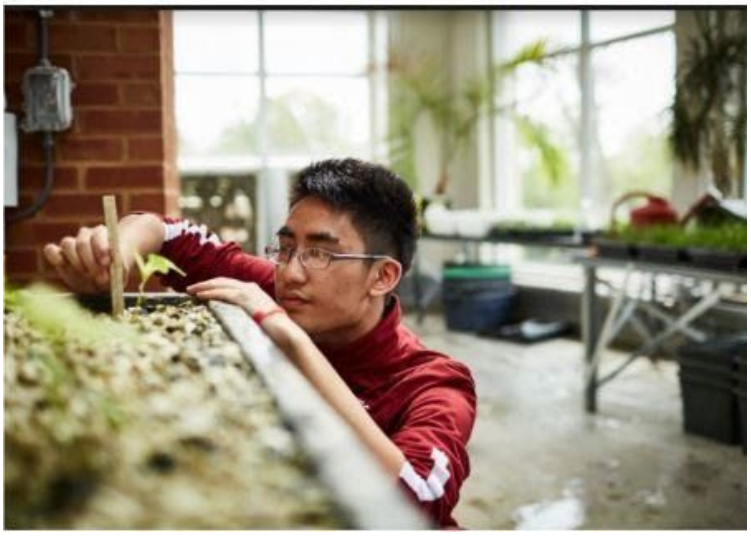
● We have three teachers with Sustainability, USGBC Green Educator, Green Chemistry, or similar certifications.
● We are seeking to have certification for students on the transcript in the next two years.
MICDS teachers attend workshops
● Several faculty and students have attended and presented at the Sustainability Institute for Educators.
● Several faculty and some grounds staff have attended similar professional development at NSTA, STOM, MEEA, Master Naturalist Certification offered by the MO Dept. of Conservation, and attended/presented at the Missouri Botanical Garden classes, St. Louis Community College, and the Sierra Club.
MICDS teachers provide workshops
● Several faculty and students have provided workshops on 'Green' topics at Summit for Transformative Learning at MICDS, Sustainability Institute for Educators, Missouri Botanical Garden, Caldwell Collaborative, and Independent Schools of St. Louis Sustainability Collaborative. Many workshops are taught in the certified LEED Platinum STEM Building.

Learning in Environmental Setting

● Several classes are held out front in the Bioswale, near/in the campus pond, campus stream, and wooded area near the stream, including a trail created in conjunction with the Deer Creek Watershed Alliance. Water quality, invasive species removal, planting native species, tree planting, creek clean-ups, plant identification, and biodiversity hunts, and erosion identification and control measures are all student-driven projects that take place outside the school day.
Local Community Engagement
● MICDS students collaborated with the City of Ladue storm water survey, presented to the City of Ladue, collaborated with the Danforth Plant Science Center, created biomimicry projects, produced countless awareness campaigns on 'green' topics including hosting e-recycling, bicycle repair and donation drives, and clothing drives and swaps. Students provided the leadership for all these projects.
● MICDS has held community meetings for the Deer Creek Watershed Alliance to encourage homeowners to adopt water management practices, hosted several 'honeysuckle hacks' on campus to train area homeowners how to manage this invasive species on their property, hosted several speakers and training including a soil (microscopes class), soil conservation demonstration and speaker, panel discussion of area schools water and turf management, USGBC rainwater management and reuse seminar and the Shaw Speaker Series from the Missouri Botanical Garden. Recognized with the 2014 Growing Green Award for Education by the USGBC.

Community Partners in Green Efforts

● MICDS will host for the 10th year the Sustainability Institute for Educators partnering with Webster University, U.S. Green Building Council Missouri Gateway Chapter, Missouri Botanical Garden / Earthways Center, Madison County Green Schools, STL Zoo, St. Louis Public Health, Missouri Environmental Education Association, MRC e-recycling, Independent Schools of St. Louis Sustainability Consortium, Flik Food Service, STL Composting, and MO ReLeaf.

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