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 Pre-K-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 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 2015-2018

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

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

Official School Name: Parkway North School
(As it should appear on an award)

Official School Name Mailing Address: 12860 Fee Fee Road, St. Louis MO 63146
(If address is P.O. Box, also include street address.)

County: St. Louis State School Code Number *: 096095-1075096095

Telephone: (314) 415-7600 Fax: (314) 415-7614

Web site/URL: https://www.parkwayschools.net/Domain/33 E-mail: jmarquart@parkwayschools.net

**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 accurate.

Jenny Marquart Date: 1/18/17

(Principal's Signature)

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

District Name: Parkway School District

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

(Superintendent's Signature) Date: 1-19-2017

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: Missouri Department of Elementary and Secondary Education

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

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

(Nominating Authority's Signature) Date: January 27, 2017

SUMMARY AND DOCUMENTATION OF NOMINEE'S ACHIEVEMENTS

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

SUBMISSION

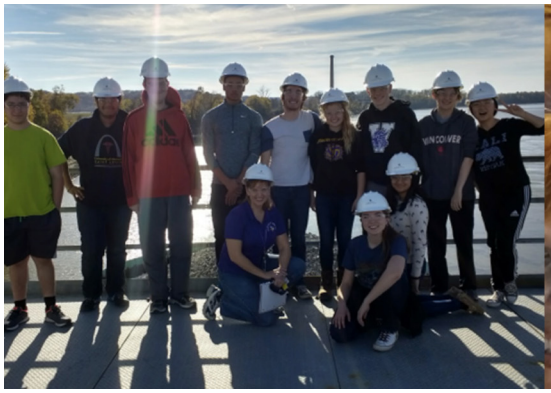
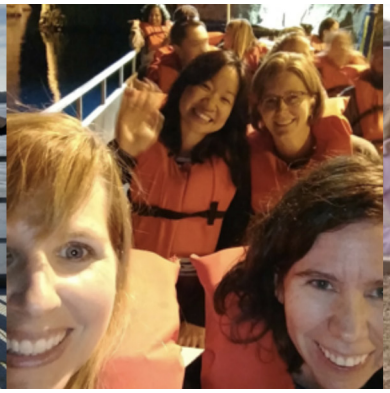
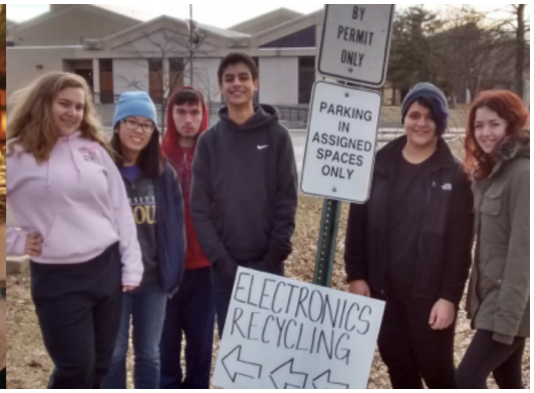
The nomination package, including the signed certifications and documentation of evaluation in the three Pillars should be converted to a PDF file and emailed to green.ribbon.schools@ed.gov according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509
Expiration Date: March 31, 2018

Public Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email ICDocketMgr@ed.gov and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.

Parkway North School, St. Louis Missouri

School Contact Information

School Name: Parkway North School	Street Address: 12860 Fee Fee Road	
City: St. Louis	State: MO	Zip: 63146
Website: https://mo01931486.schoolwires.net/Domain/33	Facebook:https://www.facebook.com/pages/Parkway-North-High-School/104106589626380	
Principal: Dr. Jenny Marquart	District Parkway C2	
Principal Email:jmarquart@parkwayschools.net	Principal Phone: 314 415 7601	
Lead Applicant and Position (if different): Erik Lueders - Director of Sustainability & Purchasing		
Lead Applicant Email: elueders@parkwayschools.net	Lead Applicant Phone: 314-415-8278	

School Characteristics

Level ( ) Early Learning Center ( ) Elementary (PK - 5 or 6) ( ) K - 8 ( ) Middle (6 - 8 or 9) (x) High (9 or 10 - 12)	School Type (X) Public ( ) Private/Independent ( ) Charter ( ) Magnet	How would you describe your school? ( ) Urban (X) Suburban ( ) Rural	Total Enrolled: 1155 Graduation rate:90.72% Attendance rate: 86.9%

Does your school serve 40% or more students from disadvantaged households? ( ) Yes (x) No		
% receiving FRPL: 26.1%	% limited English proficient: 1.5%	Other measures: 49.1% minority (non-white)

Summary Statement

Parkway North is a school that has a deep rooted commitment to Whole School Sustainability. We have adopted the concepts of making our physical place, organizational culture, and educational program more sustainably focused. For many years, the school has been on the forefront of integrating environmentally preferable practices and procedures into the everyday operating practices of the building. In most cases these enhancements have been a direct response to student driven initiatives. These initiatives range from single stream recycling programs, community clothing drop off boxes, a Shoeman shoe drive water project, composting for food scrap and compostable serviceware, river cleanup crews, rain gardens, and native prairie gardens.

Energy related projects include the installation of LED lighting upgrades for outdoor spaces that include controls that allow the fixtures to dim late at night when no movement is detected on the parking lots. We've also installed a 25 kW solar photovoltaic array that is ground mounted, so students are able to see up close what a functioning array looks like. We have several compressed natural gas school buses that are able to transport students with fewer emissions than traditional diesel buses.

While we recognize that our school is not the most efficient, we are working hard to implement a master plan that involves major replacement of HVAC equipment to include chillers, new VAV boxes, and demand control ventilation. Improvements made so far have lowered the amount of resources required to operate the school, thereby reducing our impact on the environment. Using LEED O+M and NC as a tools to measure ourselves against, we are continuing to pursue additional initiatives that are applicable to related credit categories that we have not yet achieved.

While we work hard to reduce the amount of resources we use to operate our school, we also seek to create a healthy environment that is conducive to learning. We have a district Safety Specialist as well as a Certified Industrial Hygienist, that work to make sure our indoor environment is as safe and healthy as the outdoor environment that we are working to preserve. This includes actively managing proper use of chemicals in the district and using practices such as Integrated Pest Management and Green Cleaning to minimize the presence of any hazardous materials inside our buildings. We have even installed higher efficiency and higher quality air filters on our HVAC equipment so that we are eliminating as many particulates from the air as possible.

In addition to initiatives to create a healthy environment, we have programs that actively promote health and wellness to instill these values into our community. This includes blocking out thirty minutes during a week dedicated to school climate. Our students and administration create videos and power points with topics ranging from accepting all people to diminishing homelessness and hunger. Students are then guided through teacher or peer led discussions, expressing concerns or creating action plans on how to create a better community. Our school nurse connects students to health and social resources to live a healthy life while our wellness coordinator leads after hours yoga and stress management sessions so that our community can stay both physically and mentally healthy.

While these operational improvements are impressive, we believe that the deep connection our educational experiences offer our students is what is driving much of the change. We are creating a generation of sustainability natives. We not only have multiple award winning environmental clubs as demonstrated by our Lexus Eco-Challenge and Envirothon teams, but we also integrate these learning opportunities throughout our curriculum. This curriculum extends beyond science and into all areas. For example, our English curricula requires a Recycling Project and our PE department has a demonstrated commitment to outdoor education.

Faculty members are engaged in protecting the planet as well, whether it's through their regular professional development with the MO Department of Conservation or Missouri Botanical Gardens or just a casual comparison of the most efficient mode of transportation. All students and staff throughout Parkway North are immersed in Environmental Science as a way of life rather than as a single course taken once in a four year high school career. Pioneering green technology and education was not always easy nor was it always popular. But in our hearts, we know it is right.

Cross Cutting Questions

1. Team - Has your school assembled a team of teachers, administrators, staff, students and interested members of the community, to help the school accomplish green goals? **(x) Yes ( ) No**

Parkway North has no single “Green Team”, instead, school and community members address sustainability issues through a variety of initiatives.

Envirothon is an international competition designed to hone students’ critical thinking skills as they work to solve environmental problems. Parkway North’s Envirothon Team competes in this challenge annually, which includes a combination of written tests, field studies, and oral presentations. The students participate in local environmental workshops throughout the year to prepare. Students have initiated fieldtrips to local agricultural cooperatives to learn about sustainable farming practices that can be implemented in small space locations such as homes and schools. Team members have participated in workshops presented by the Department of Conservation and the Soil and Water District where they have learned about the potential damage of invasive species and the value of science-based landscape management. Current team members Aerin Leigh Lammers, Sarah Butterfield, Jillian Day, Christina Ibrahim, Ojasvi Pawar, Sam Amacher, Shrinithi Karthikeyan, Deepa Shukla, Yanshuo Zhang, Claire Maher, and Aditya Gokhale have been instrumental in sharing their knowledge with all four of our high schools, presenting to the science teachers on professional development days.

The Lexus Eco Challenge is a competition sponsored by Scholastic which encourages students to help make local changes to improve the environment. Parkway North’s team for the recent school year included students Aditya Gokale, Tobi Ola, Deepa Shukla, Jeremy Chang, and Yan Zhang. Dr. Karen LaFever and Dr. William Bowman were the faculty sponsors. This group led activities ranging from presenting at the middle school to educating all students about our composting program to sponsoring a recycling drive. Parkway North’s team participated in and won both Lexus Eco Challenges in the Fall of 2016.

District Operations staff, such as the Sustainability Director - Erik Lueders, Manager of Engineering - Scott Bennett, Custodial Supervisor - Maggie Wells, Director of Facilities - Mike Mertens, Director of Nutrition Services - Marlene Pfeiffer, Director of Health Services - Robin Wallin, STEM Coordinator - Jennifer Proffit, Coordinator of PE and Outdoor Education - Ron Ramspott, Employee Wellness Leader - Becky Bright, are involved at various phases of the student led projects. The school’s Building Manager - Jon Metheny, Principal - Jenny Marquart, and Head Custodian - Mike Staten, are brought in regularly to assist with the implementation of various green initiatives throughout the school and community.

Parkway North is fortunate to have a comprehensive team of adults within the community working with faculty and student leaders to help us accomplish our green goals. The Missouri Department of Conservation’s Education Liaison Dick Turner has been instrumental in guiding the development of our environmental courses by providing free textbooks, connections to local workshops, and grants for outdoor education. Colleen Scott and Amy Anderson have also made themselves available as mentors for our environmental teachers by sharing their expertise on our outdoor field trips. Lydia Toth at the Missouri Botanical Gardens has also been a key member of Parkway North ’s mentor team, coaching several teachers through Project WET (Water Education for Teachers) and leading them through workshops at Shaw Nature Reserve. She is the lead educator in the summer program SIFT (Shaw Institute for Field Training), which is attended by several North High students.

2. Benchmarking - Is your school participating in a local, state or national school program, such as EPA ENERGY STAR Portfolio Manager, EcoSchools, Project Learning Tree, or others, which asks you to *benchmark progress* in some fashion in any or all of the Pillars? **(x) Yes ( ) No**

Parkway North has been benchmarking energy use utilizing Energy Star Portfolio Manager and has achieved an Energy Star score of 48. While we recognize that is less than desired, we take tremendous pride in the fact that we have drastically improved this school’s energy efficiency over recent years. This time five years ago, the school was rated at a 5. The lack of efficiency of this school has historically been a result of a very old and inefficient HVAC system that has been made worse by changing an open concept school design from the 1970s into one with walled classrooms. Parkway North is now two years into a master plan that will continue to build on the significant efficiency improvements that have been realized in the last five years. We believe continual improvement upon existing structures is a sustainable approach rather than abandoning or entirely rebuilding a school

3. Awards - Has your school, staff or student body received any awards or grants for facilities, health, or education related to environmental sustainability? **(x) Yes ( ) No**

- School District Scholarship Program ($20,000) - USGBC Center for Green Schools - 2015
- Outstanding Small Organics Diversion Program Award (District Wide) - Missouri Recycling Association 2013
- Growing Green Award (District Wide) - USGBC MO Gateway Chapter - 2013
- Energy Star Leader Award 20% Reduction (District Wide) - EPA/DOE - 2013
- Green Cleaning Award Honorable Mention for K-12 Districts (District Wide) - American School & University Magazine - 2013
- Energy Star Leader Award 10% Reduction (District Wide) - EPA/DOE - 2012
- Growing Green Award - Parkway North Teacher, Russ Barton - USGBC MO Gateway Chapter - 2011
- School Recycling Award (District Wide) - American Forest & Paper Association - 2010
- Growing Green Award (District Wide) - USGBC MO Gateway Chapter - 2009

The Lexus Eco Challenge is a competition sponsored by Scholastic each year. Parkway North has won the initial challenge for the past six years, earning over $60,000 in scholarship money for our students as well as funding the construction of a classroom greenhouse to be built in the summer of 2017.

Since 1995, Parkway School District has received 13 grants related specifically to recycling, waste minimization, and composting. The total amounts to over $353,000 in grants from St. Louis County and the St. Louis Jefferson Solid Waste Management District. These funds have allowed Parkway North School to be among the leaders in the state with regards to recycling and composting. Parkway North was among the first schools in the entire St. Louis area to pilot commercial composting in 2012. The success of this program was a result of the effectiveness and enthusiasm of the student body and supporting staff to continue to make Parkway North a leader in environmentally friendly practices.

Parkway North has also received over $10,000 in incentive funds from Ameren Missouri to make the school more energy efficient. This is related to lighting, PC power management, and vending misers. Another $50,000 was awarded for the installation of a 25 kW solar PV array. We anticipate being awarded another $50,000 in incentive funds related to major HVAC upgrades that were conducted during the summer of 2016.

Additionally, Parkway North was part of a larger district wide initiative to retrofit all exterior lighting to efficient LED fixtures. This was funded from the State of Missouri Department of Economic Development's Energy Loan Program. The overall loan awarded to Parkway School District and thus Parkway North was approximately $700,000.

4. Goals - List one to three goals your school is planning on attempting over the next year.

1. Through the Green Schools Quest, perform a student-led energy audit and implement changes to reduce our school's carbon footprint. We have already identified areas where unused equipment could be turned off through timers or by behavioral education to reduce electricity usage. Examples include adding occupancy sensors for lights, modifying the power settings on projectors and printers, and ensuring that PC power-saving profiles are applied and working correctly.
2. Parkway North's Lexus Eco Challenge group is expanding the produce gardens at NE Middle and constructing a deer fence to protect the crops from herbivores. We are also constructing a greenhouse on the North High campus, using funds won from the Lexus Eco Challenge. This increased harvest is going to be delivered to inner city food deserts and shared with the community.
3. Parkway North is working to implement the district wide measurable objective "Each school, department and program will successfully integrate environmentally, socially, and fiscally sustainable best practices into their area of focus." This includes participation in the Department of Energy's Better Buildings Challenge - working to reduce energy consumption by 20% within 10 years.

Pillar I: Reduced Environmental Impact and Costs

ENERGY

1. Energy STAR - Do you track resource use in ENERGY STAR Portfolio Manager? **(x) Yes ( ) No**

If yes, what is your score? 48	If score is above a 75, have you applied for and received ENERGY STAR certification? **( ) Yes ( ) No**

2. Energy - Has your school reduced its total non-transportation energy use from an initial baseline? **(x) Yes ( ) No**

Baseline Year: 2011	Energy (kBtu / student): 32,958
Ending Year: 2016	Energy (kBtu / student): 24,523
Reduced kBtu: Baseline Energy – Ending Energy = 8,435 kBtu / student	
%Reduction: Reduced Energy / Baseline Energy = 25.6 % kBtu / student	
Percentage Reduction per Year: % Energy / (Ending Year – Baseline Year) = 5.1 % kBtu / student / year	
Parkway North School is a part of Energy Star's Portfolio Manager and actively tracks energy usage each month by inputting utility bill data into the software. In addition to Portfolio Manager, the school utilizes EnergyCAP which is a robust utility analysis software that is able to provide a higher level of insight into the school's energy usage, reduction, normalizing usage against weather, and identifying a school's base load, among other important metrics. A summary report is generated and shared on a quarterly basis to help maintain awareness of the school's energy conservation efforts.	

3. Greenhouse Gases - Can your school demonstrate a reduction in greenhouse gas (GHG) emissions? **(x) Yes ( ) No**

Baseline Year: 2011	GHG Emissions (MT CO2e / student): 4.56
Ending Year: 2016	GHG Emissions (MT CO2e / student): 3.42
Reduced GHG: Baseline GHG – Ending GHG = 1.14 MT CO2e / student	
% Reduction: Reduced GHG / Baseline GHG = 25 % MT CO2e /student	
% Reduction per Year: % GHG / (Ending Year – Baseline Year = 5 % MT CO2e / student / year	
Parkway North School is a part of Energy Star's Portfolio Manager and actively tracks energy usage each month by inputting utility bill data into the software. In addition to Portfolio Manager, the school utilizes EnergyCAP which is a robust utility analysis software that is able to provide a higher level of insight into the school's energy usage, reduction, normalizing usage against weather, identifying a the school's base load, among other important metrics. Parkway North 's emissions were estimated by using Energy Star's Portfolio Manager. Portfolio Manager is able to identify the amount of emissions for each building.	
What, if any, offsets were used? No offsets were purchased as this is not yet an appealing use of tax resources to our community. We instead invest directly into upgrading our facilities to be more efficient.	

4. **Renewable Energy** – Does your school use a renewable fuel source? **(x) Yes ( ) No**

On-site renewable energy generation: .75 %	Type: Solar PV
Purchased renewable energy: 0	Type:
Parkway North has a 25 kW Solar PV array that is ground mounted to provide a visible learning access to students. In addition, this ground mounted array was a challenge and necessary as the roof structure was unable to support a ballasted roof mounted system that is common among solar PV arrays.	

5. Building - Has your school constructed or renovated building space in the past ten years? **( ) Yes (x) No**

Renovation (duplicate if necessary)

Renovation Year:	Total Area of renovation: The only renovations conducted have been capital replacement projects and not major renovations that are subject to certification standards. All replacement projects must meet ASHRAE 50% Advanced Energy Design Guidelines for K12 Schools
Certification Year:	% Area that meets a green building standard:
Certification Standard:	

WATER AND GROUNDS

6. Water Use - Can you demonstrate a reduction in your school's total water consumption? **(x) Yes ( ) No**

Baseline Year: 2012	Water Use (gal / student / year): 8,683
Ending Year: 2016	Water Use (gal / student / year): 5,157
Reduced Water Use: Baseline Water Use – Ending Water Use = 3,526 gal / student /year	
% Reduction: Reduced Water Use / Baseline Water Use = 40.6 % gal / student	
% Reduction per Year: % Water Use / (Ending Year – Baseline Year) = 10.15 % gal / student / year	
% Reduction Domestic Water Use: 37%	% Reduction Irrigation Water Use: 45%
How are these reductions documented (i.e. ENERGY STAR, utility bills, school district reports)? Parkway North is part of Parkway School District's portfolio within the Energy Star Portfolio Manager. Water bills are entered into this software as bills are received.	

7. Landscaping – Does your school have water efficient or regionally appropriate landscaping (WERAL)? **(x) Yes ( ) No**

Total Area: 779,942 Sq. Ft.	WERAL Area: 88,301 Sq. Ft.	% WERAL: 11%
List Water Efficient Plants: • Trees - Black Gum, October Glory Red Maple, Forest Pansy Redbud, Autumn Brilliance Serviceberry, Taylor Juniper • Shrubs - Gro-Low Sumac, Henry's Garnet Virginia Sweetspire, Little Henry Virginia Sweetspire, Diabolo Ninebark, New Jersey Tea, Sea Green Juniper, Pink Spire Sweet Pepperbush • Perennials - Big Blue Lily Turf, Columbine, Coral Bells, Little Bluestem, Milkweed, New England Aster, Prairie Dropseed, Shenandoah Switch Grass, Tara Prairie Dropseed • Turf - Buffalo Grass		
List Regionally Appropriate Plants: • Trees - Black Gum, October Glory Red Maple, Forest Pansy Redbud, Autumn Brilliance Serviceberry, Taylor Juniper • Shrubs - Gro-Low Sumac, Henry's Garnet Virginia Sweetspire, Little Henry Virginia Sweetspire, Diabolo Ninebark, New Jersey Tea, Sea Green Juniper, Pink Spire Sweet Pepperbush • Perennials - Columbine, Coral Bells, Little Bluestem, Milkweed, New England Aster, Prairie Dropseed, Shenandoah Switch Grass, Tara Prairie Dropseed • Turf - Buffalo Grass		
The Parkway North section of the site has recently been renovated and includes extensive and exclusively WERAL species in landscaping and in conjunction with stormwater BMPs. There is also a 1,300 Sq. Ft. rain garden that uses runoff from the building for water loving and water efficient plants.		

8. Alternate Water Sources - Does your school use alternate water sources for irrigation? **(x) Yes ( ) No**

In the main courtyard area leading up to the entrance of the school, there is a native landscape garden that contains 3 rain barrels that are used to irrigate the garden.

9. Runoff - Does your school try to reduce storm-water runoff and/or reduce impermeable surfaces? **(x) Yes ( ) No**

We constructed a new parking lot with permeable pavers that allow storm-water to be retained in the voids of a 4 ft deep aggregate base layer below the pavers. This lot replaced an impermeable asphalt lot. The size of this new parking lot is 48,000 square feet. We constructed a 3,200 sq. ft. bioswale as a storm-water quality best management practice feature (BMPs), which includes deep rooted plants that help to absorb the water rather than allow the water to runoff into sewer systems and a layered soil system to filter contaminants from the storm-water. We constructed a 9,000 sq. ft. storm-water detention basin. The entire synthetic turf stadium field subdrainage system is a BMP with a layered soil system and a vortex chamber to filter contaminants from the storm-water. We also have 3 rain barrels that capture a portion of the roof rainwater runoff that are used to irrigate a rain garden located in the Parkway North courtyard.

10. Ecology – Does your school have area(s) set aside for ecologically beneficial (EB) uses? **(x) Yes ( ) No**

Total Area: 779,942 Sq. Ft.	EB Area: 65,663 Sq. Ft.	% EB Area 8%
Parkway North planted a native garden area consisting of a variety of prairie plants found throughout Missouri. This garden is used by our biology, AP Environmental, and Environmental classes as an area to conduct field studies of flora and fauna. For example, our AP Environmental class will mark and recapture insects and then use the Shannon Wiener Index of Biodiversity to determine the richness and evenness of the population. Our biology classes will observe the lifecycle of flora throughout the season, gathering seeds to populate their own native gardens at home. There are also 62,863 Sq. Ft.. of natural hedge row areas on the site.		

WASTE

11. Solid Waste – Has your school diverted some of its solid waste from a landfill through recycling and composting, and/or has it implemented practices to reduce waste at the source (source reduction)? **(x) Yes ( ) No**

cu yds waste diverted: 74 %	mos. / yrs. covered : 12 - 2015/2016
Parkway North School has 80 cubic yards of single stream recycling per week, 9.5 cubic yards of composting per week, and 32 yards of landfill per week. This does not include any other recycling activities (scrap metal, e-scrap, clothing, etc.) of which could contribute to a greater percentage.	
avg monthly cu yd. 0.45 waste / student:	mos. / yrs. covered: 12 -2015/2016
Parkway North participated in a paper reduction campaign, utilizing a program called PaperCut that creates rules and limits printing thereby reducing paper waste. The school has changed all serviceware to compostable materials rather than Styrofoam, allowing for composting. Water Bottle fillers installed on drinking fountains reduce disposable bottle use.	

12. Hazardous Waste - Does your school have a program for tracking, managing, and safely disposing of hazardous waste, and/or for systematically reducing the amount produced? **(x) Yes ( ) No**

How many gallons or lbs. does your school currently have of each of these classes of hazardous materials?				
Flammable liquids 265 lbs	Corrosive liquids 174 lbs	Toxics 28 lbs (mostly lead)	Mercury 0 lbs	Other:
Hazardous Materials are tracked, managed and disposed of through the district's Environmental Services Department (ESD). Waste materials, laboratory waste, and art waste, etc. are disposed of through licensed waste haulers and EPA permitted disposal sites. Science chemical inventories are kept at the school level and reviewed by the district's ESD.				
Parkway School District has a mercury reduction program where mercury containing science and health equipment has been removed from the school and replaced with electronic equipment. The district's Environmental Services Department worked with the Missouri Department of Natural Resources to properly remove and dispose/recycle the mercury in this equipment.				

13. **Green Cleaning** - Does your school use a green cleaning custodial standard? **(X) Yes ( ) No**

Which green cleaning custodial standard is used?	What % of your products are certified?	What specific 3rd party certified green cleaning product standard is used?
Green Cleaning Guidelines and Specifications for Schools, 2009, Missouri Department of Elementary and Secondary Education	51% if including floor finishers and sealers, 91% if excluding floor finishers and sealers	Green Seal, Ecologo, Design for the Environment, California Air Resources Board, Carpet and Rug Institute

14. **Electronic Waste** - Does your school recycle electronics in an environmentally responsible way? **(x) Yes ( ) No**

All of our electronics including desktops, laptops, monitors, peripherals, projectors, batteries, phones, CRTs, light bulbs, ballasts, motors, among other equipment are repurposed or recycled at the end of their useful life. Items are either sold to the public at govdeals.com or recycled with a registered e-scrap recycling vendor.

TRANSPORTATION

15. Alternative Transportation – Do students and/or staff use alternatives to single passenger vehicles to get to and from school? **(x) Yes ( ) No**

Parkway North utilizes school buses for student transportation. 49% of the total enrollment participates in this option. Our school bus fleet has completely phased out all older diesel engines that had higher emissions (model year 2007 and prior), participating in the EPA's Clean School Bus program. In addition, 29% of the buses are fueled with compressed natural gas (CNG), a cleaner alternative to diesel.

16. Accommodations – Does your school accommodate alternative transportation by providing designated carpool parking stalls, bike racks for all ages, a Safe Pedestrian Routes or Walking School Bus program, and/or other programs? **(x) Yes ( ) No**

Parkway North has multiple bike racks available that are actively used year round, particularly in the spring and fall. During peak seasons, an average of 15 bikes can be found on a given day. We also have a designated walk zone for students that live within 1 mile of the school, and are not eligible for bus service.

PURCHASING

17. Paper - Is any of your school's total office/classroom paper sustainably sourced? **(x) Yes ( ) No**

% post-consumer recycled content paper: 100 %	% paper from FSC certified forests: 0	% chlorine-free paper: 35%
Parkway North and the Parkway School District works diligently to pursue more sustainably sourced materials. All copy paper is 30% recycled content. All paper towels and toilet tissue are 100% recycled, Green Seal Certified, Green-E Certified (made with renewable energy), and processed chlorine free.		

18. Food - Is any of the food purchased by the school organic, local, or environmental or sustainable in some other way? **(x) Yes ( ) No**

We are able to work with our produce vendor to provide the below products from local sources:

- Apples (Jonathon, Fuji, gala, red delicious, golden delicious): August - October.
- Cabbage: May - October.
- Squash yellow and zucchini: July - October.
- Greens (mustard, turnip, collard, loose turnips and loose beets): September - November. Sweet Potatoes (Arkansas): Year round.
- Peppers (green): July - October. Peaches: July - September.
- Corn: July - September. Watermelons: July - September Tomatoes: July - September.

OVERALL ENVIRONMENTAL IMPACT

19. Environmental Impact Summary - Summarize your school's top accomplishments in energy use/ghgs, water and grounds, waste, transportation and purchasing. Be sure to include any innovative efforts or efforts not included already in this section.

Parkway North has instituted a variety of energy saving strategies including PC power management, an HVAC master plan that involved chiller, variable air volume system, and control replacements, high efficiency 25 watt T8 lighting upgrades, outdoor LED lighting with dimmable control, vending misers, retro-commissioning, and purchasing only Energy Star certified electronics. In doing so, the school has drastically improved energy efficiency within the last five years.

Building water reductions have been achieved by switching to air cooled instead of water cooled chillers, retrofitting faucets with high efficiency 0.5 gallon per minute aerators, and installing dual-flush valves on toilets.

The school has also been actively transforming outdoor spaces to fall in line with Sustainable Sites, a USGBC landscape initiative. Over 10% of the school's grounds are landscaped with water efficient, regionally appropriate plant species, reducing demand for irrigation and providing educational resources for teachers and students. In addition, rainwater capture and replacement of an asphalt lot with permeable pavers, and the addition of swales and other water conserving features has reduced stormwater runoff from school grounds. The redesign of the lot also saved 7 large trees.

Parkway North was among the first schools in the region to switch Styrofoam serviceware to compostable trays and to use a post-consumer composting program in conjunction with a successful single-stream recycling program. In addition, all C&D scrap metal from our renovation projects is recycled. We were the first community drop-off location for aluminum recycling throughout the district. Today, there are a variety of options for recycling less common materials such as print cartridges, batteries and cell phones.

Parkway North purchases 30% post-consumer waste recycled paper. The school also works with its produce vendor to purchase local apples, cabbage, squash, greens, peppers and corn from local sources when in season.

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

ENVIRONMENTAL HEALTH

1. Water Sources - Is the school's water source, whether municipal, on-site well, or other, protected from potential contaminants? **(x) Yes ( ) No**

Parkway North receives its water from the local utility, Missouri American Water, which samples and analyzes its water supply frequently for Clean Water Act contaminants. A Parkway building is one of their testing sites where they collect routine water samples that represent their larger water system.

2. **Drinking Water** - Does your school have a program in place to test for and control lead or other contaminants in drinking fountains and sinks? **(x) Yes ( ) No**

Parkway School District has implemented a "lead in drinking water" program at each school building utilizing EPA's 3T's (Training, Testing, Telling) for Reducing Lead in Drinking Water in Schools Program. Where lead was greater than 15 ppb, remedial actions, such as replacing the faucet and piping were taken, and the equipment was resampled.

3. **Moisture** - Does your school take steps to control moisture from leaks, condensation, and excess humidity, to promptly clean up mold or remove moldy materials when found? **(x) Yes ( ) No**

Parkway School District has an Environmental Services Department (ESD) that investigates indoor air quality issues including signs of mold and/or moisture. As part of the investigation process the HVAC system is checked as well as any other sources of moisture: roof, plumbing, exterior water, etc. Personnel use moisture meters to check walls, ceilings, floors and furniture for excess moisture. Air quality readings such as temperature, relative humidity, carbon monoxide and carbon dioxide are taken routinely to check for potential sources of concern. The ESD works with maintenance and custodial services to ensure proper cleanup and repair of any identified sources of concern.

4. Ventilation - Does your school have procedures and protocols for inspecting and maintaining the building's ventilation system and all unit ventilators to ensure they are clean and operating properly, and to ensure spaces are adequately ventilated with outside air consistent with state or local codes or national standards? **(x) Yes ( ) No**

Parkway North utilizes district HVAC technicians to ensure all HVAC systems are operating properly and are well-ventilated per ASHRAE and St. Louis County standards. Larger spaces utilize CO2 sensors to identify when more fresh air is required and when energy can saved by re-circulating conditioned air. HVAC equipment is connected to a centralized buildings automation system that is actively reviewed to ensure proper operation. Also, all equipment has a twice a year preventative maintenance program. All units are equipped with high efficiency air filters that are at a minimum of MERV 8 or 9 depending on filter type.

5. Airborne Contaminants - Has your school taken steps to control for specific airborne contaminants like exhaust systems for heating systems and labs, no idling policies for vehicles (including school buses), vehicle loading/unloading zones at least ten feet away from air intakes, doors and windows, and or other policies and practices? **(x) Yes ( ) No**

All vehicles participate in a no-idling policy and refer to St. Louis County Health Department ordinances 312.340 and 10 CSR 10-5.385. This includes all buses and maintenance vehicles. All science department laboratories have fume hoods equipped with exhaust fans that run immediately when the hood doors are opened. All fresh air intakes are located a minimum of 10 feet away from any vehicle areas or exhaust stacks per code requirements. All new paints, furnishings, and floorings have low or no VOC content in order reduce indoor air contaminants.

6. Integrated Pest Management - Does your school use Integrated Pest Management (IPM) to control pests? **(x) Yes ( ) No**

The Environmental Services Department has an Integrated Pest Management Program (IPM) and has an on‑staff licensed pest control technician trained in IPM procedures. EPA restricted use pesticides are not used in district buildings. The pest technician works with maintenance to reduce pest entry, with teachers and building staff to reduce food left in classrooms, and with custodians to help with cleaning procedures that reduce pests. Custodial, grounds and maintenance personnel complete annual training on IPM approved pest bait stations and traps are utilized before pesticides

7. Chemical Management – Does your school have policies and procedures for identifying, managing and or reducing exposure to other chemical hazards like smoking on school grounds or buses, mercury in thermometers, radon in below ground spaces, CCA in playground equipment, materials used for cleaning, chemicals used for teaching, etc.? **(x) Yes ( ) No**

- Parkway North has a smoke free policy including e-cigarettes, that includes campus, district vehicles/buses.
- Mercury containing equipment in classrooms, thermometers, barometers, psychrometers and blood pressure cuffs in the nurse's office were removed and disposed/recycled through the MDNR. If mercury equipment is discovered, the Environmental Services Department (ESD) is notified and it is removed.
- The school has been tested for radon. The ESD has two electronic radon detectors that can be used to test for radon as needed and follow up purposes.
- Playground equipment made of CCA treated lumber was sealed until it was replaced with non-CCA equipment.

NUTRITION AND FITNESS

8. Healthier US Schools – Does your school participate in the USDA's Healthier Schools Challenge or a similar program? **(x) Yes ( ) No**

Parkway District Nutrition Services follows USDA Guidelines for meal planning. These standards provide healthy eating options for students. In addition, fruits and vegetables are offered daily via salad bars and produce bins. A la carte items sold meet USDA Smart Snack Guidelines.

The Health and Physical Education staff support the annual Let's Move in Parkway event promoting healthy, active communities. The event partners with Shape Up US and has been recognized by the national Let's Move Active Schools program. Parkway North hosted the 10th annual Let's Move in Parkway event in May 2016, which attracted over 1,300 community members.

9. Healthy Foods – Does your school incorporate fresh, local and/or organic produce a Farm to School program, a school garden or some other source into the cafeteria, or a class cooking lesson? **(x) Yes ( ) No**

Parkway North works with vendors to source locally available produce when it is seasonally available. More information is above (Pillar I, #18). The school also has an available salad bar as a lunch option every day. Family and Consumer Sciences is an elective that teaches students nutrition through cooking.

10. Fitness – How many minutes a week are spent on supervised P.E., and what % of that takes place outdoors?

minutes P.E.: 225 minutes/week (1.0 credit or two P.E. semester courses required during high school)	% outdoor P.E.: 25%

Parkway North has a unique outdoor PE program in that we are the only school in Parkway with a climbing tower and high ropes course. In a course entitled "Adventure Pursuits", we teach a unit on climbing and rappelling, encouraging students to work as a team and conquer their fears. In addition we have physical education courses that include outdoor sports skills, walking for fitness, aquatic experiences/scuba, mountain and trail biking and rollerblading.

11. Outdoor Safety – Does your school have programs to raise awareness of safe sun exposure (e.g. EPA SunWise), safe outdoor air quality (e.g. AirNow AQ Flag), etc. **(X) Yes ( ) No**

Parkway uses St. Louis Regional Clean Air Partnership's Air Quality Forecasts; a color coded system based on EPA's Air Quality Index (AQI). Outdoor and practices are adjusted based on these forecasts. Playgrounds are inspected annually by Environmental Services' licensed inspector and teachers and custodians are trained in playground safety.

12. Outdoor Activity – Does your school provide opportunities for outdoor exercise and recreation separate from P.E.? **(x) Yes ( ) No**

Parkway North has a variety of sports teams that practice and play outdoors. We have football, baseball, softball, soccer, tennis, track, cross country, and lacrosse available as organized teams with faculty coaches. In addition to this, we have a parent sponsored Ultimate Frisbee team that practices on our fields in the spring. A high ropes course is constructed on the site and is used by students throughout the school district.

COORDINATED SCHOOL HEALTH PROGRAM

13. Health Education – Is education about exercise, nutrition and safety integrated into classroom assignments and assessed? **(X) Yes ( ) No**

Every student at Parkway North is required to take a course entitled "Health Education". In this course, they learn how to calculate BMI, plan nutritious meals, and learn about the transmission of bacteria and viruses. They are assessed through a variety of written tests and oral presentations.

14. Health Services – Does your school have a school nurse or health center to provide first aid, emergency care, assessment and planning management for chronic conditions like asthma and management of health and emotional stressors for students and staff? **(x) Yes ( ) No**

Parkway North's full time school nurse is Teresa Beilsmith, BSN, RN. Care coordination services help to link students to health and social supports needed to be healthy. She facilitates hearing and vision screenings for students and helps manage chronic and acute health concerns of students. She recently led a session on food allergies and how to administer an emergency epinephrine auto-injector, providing practice for over 100 staff members. The School Health Services coordinates flu vaccination clinics for students and staff and serves as a health resource to the entire school community.

15. Mental Health - Does your school take steps to support student mental health and school climate through anti-bullying programs, peer counseling, etc.? **(x) Yes ( ) No**

Parkway North has an organized Academic Lab, a type of study hall. What makes ours different from most study halls is that we have 30 minutes every week dedicated to school climate. Our students and administration create videos and power points with topics ranging from accepting all people to reducing homelessness and hunger. After the presentation, students are guided through teacher or peer-led discussions in expressing concerns or creating action plans.

16. Employee Wellness – Does your school provide programs to assist employees with fitness, nutrition, stress management, avoidance of injury and environmental hazards and decreased tobacco use? **(x) Yes ( ) No**

Parkway North has an Employee Wellness Leader, Becky Bright, who works to promote staff wellness. Activities have included resources to train and participate in 5K's and after school yoga classes to help manage stress. Other wellness challenges embrace nutrition and physical activity, including healthy cooking demonstrations, free access to fitness rooms, an available personal trainer, a free 52 week weight management program, complimentary annual flu shots, and mental health programming. Employees are offered a $100 incentive each year to complete a free wellness visit with their doctor and a health survey. All staff members also have free access to an employee assistance program (EAP) that provides services to address personal issues and concerns, including balancing life on- and off-the-job, locating quality child care, getting legal assistance, managing relationships, handling stress and anxiety, and much more.

17. Community - Does your school have partnerships in the community to help support school initiatives, to connect the classroom with real-life examples, and to provide support for health-related activities? **(x) Yes ( ) No**

- We partner with Fleet Feet, offering discounted registrations for Healthy Walking and 5k training programs for all staff.
- Our Wellness Coordinator is partially funded through United Healthcare.
- Partnership with a local CSA (community supported agriculture) is offered to employees.
- Multiple gym discounts/corporate memberships are offered.
- Parkway North offers onsite mammography to staff as a preventive health measure.
- We work with Special Olympics to show how healthy living is important to all people and that athleticism is not for the privileged few.
- Through our Medical Club we have speakers discuss things such as diabetes or transmission of diseases.

18. Family – Does your school take steps to make families of all types welcome and to actively engage them in ways to improve health outcomes? **(x) Yes ( ) No**

Our PE department invites parents to join their child at the climbing tower and participate, encouraging families to find engaging and healthy activities that the entire family can enjoy.

OVERALL HEALTH IMPACT

19. Health Summary - Summarize your school's top accomplishments in environmental health, nutrition and fitness, and coordinated school health. Be sure to include any innovative efforts or efforts not included already in this section. (200 words max)

Parkway North has embraced the Whole School, Whole Community, Whole Child model (ASCD/CDC) to collaboratively provide diverse and comprehensive supports to ensure that all students are healthy and ready to learn, that the school environment is a healthy and safe place and that community resources are utilized to ensure maximal impact on health and wellness.

The school has a comprehensive and thorough program for meeting all local, state, federal and industry standards regarding air quality, drinking water quality, pest management and chemical management.

Parkway North has a unique outdoor PE program in that we are the only school in Parkway with a climbing tower and high ropes course. In a course entitled "Adventure Pursuits", we teach a unit on climbing and rappelling, encouraging students to work as a team and conquer their fears. In addition we have physical education courses which include outdoor sports skills, walking for fitness, aquatic experiences/scuba, mountain and trail biking and rollerblading. In addition to this, the school has a parent sponsored Ultimate Frisbee team that practices on our fields in the spring.

Every student takes a required health class that covers nutrition and fitness. In addition, 30 minutes every week is dedicated to "school climate" an academic lab where students and staff present on issues affecting the community from acceptance of others to homelessness. Following the presentation students can discuss and plan to address the issue. Staff have access to a variety of services to help with stress, nutrition, fitness and other aspects of wellness as well as yoga, cooking classes, locating quality child-care, on-site mammography and gym discounts.

Pillar 3: Effective Environmental and Sustainability Education

CURRICULUM AND ASSESSMENT

1. Literacy Requirement - Does your school have an environmental or sustainability literacy requirement? **(x) Yes ( ) No**

Parkway North does not have a school-wide environmental or literacy requirement, but it offers two levels of Environmental courses. We have an AP Environmental course that is offered for dual credit through the University of Missouri-St. Louis and a general Environmental course. Students are given multiple opportunities to read articles, listen to news stories, research various topics, engage in debates, and give oral presentations. Topics include reducing our carbon footprint, using our natural resources, and distribution of resources throughout the world. Students should be informed voters and creators of policy and our environmental courses help accomplish this.

2. Lessons - To what extent are environmental and sustainability concepts integrated into the curriculum in each subject and each grade? In the table below, list each grade taught in your school. Then list at least one environmental and/or sustainability curriculum or lesson used in all classes in that grade and the specific subject standards covered.

Grade	Curriculum or Lesson	Subjects
9	Recycling Project	English 1
11	Environmental Research Project	English 3
12	Statistical Review of Environmental Factors	AP Stats
10-12	Environmental Issues	Journalism
9	Ecology Unit	Biology 2
10	Sustainable Energy	Chemistry 2
11-12	Environmental Science	Environmental Science
11-12	AP Environmental Science	AP Environmental Science
11-12	Human Population and Food Production	AP Human Geography

3. Assessments - To what extent are environmental and sustainability concepts integrated into assessments in each subject and each grade? In the table below, list each grade taught in your school. Then list at least one environmental and/or sustainability curriculum or lesson used in all classes in that grade.

Grade	Curriculum or Lesson Assessed	Assessment Tool
9	Recycling Project	Poster/Display
11	Environmental Research Project	Research Paper
12	Statistical Review of Environmental Factors	Analytical Test
10-12	Environmental Issues	Newspaper article
9	Ecology Unit	Letter to Admin after air/water testing
10	Sustainable Energy	Multiple Choice
11-12	Environmental Science	Oral Presentations, Multiple Choice, Short Answer
11-12	AP Environmental Science	Oral Presentations, Multiple Choice, Short Answer, AP Exam
11-12	Human Population and Food Production	Multiple Choice, Short Answer, AP Exam

4. STEM - To what extent are the environment and sustainability used as a context for learning STEM (Science, Technology, Engineering and Math) thinking skills and content knowledge? In the table below, list each grade taught in your school. Then list at least one environmental and/or sustainability curriculum or lesson used in all classes in that grade.

Grade	Curriculum or Lesson	STEM Standard
9	Recycling Project	Communicating results
11	Environmental Research Project	Analyzing writing
12	Statistical Review of Environmental Factors	Analyzing data
10-12	Environmental Issues	Evaluate proposed solutions, identify and analyze faulty reasoning and unfounded inferences
9	Ecology Unit	Strand 3: Changes in Ecosystems and Interactions of Organisms with their Environments and Strand 7: Scientific Inquiry: 1. Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking
10	Sustainable Energy	Evaluate proposed solutions
11-12	Environmental Science	Strand 3: Changes in Ecosystems and Interactions of Organisms
11-12	AP Environmental Science	Strand 3: Changes in Ecosystems and Interactions of Organisms
11-12	Human Population and Food Production	Analyzing graphs and data

5. Green Tech/Careers - To what extent are the environment and sustainability used as a context for learning green technologies and career pathways? In the table below, list each grade taught in your school. Then list at least one environmental and/or sustainability curriculum or lesson used in all classes in that grade.

Grade	Curriculum or Lesson	Green Technology/Career Pathway
9	Recycling Project	Waste Management
11	Environmental Research Project	Environmental Engineer
12	Statistical Review of Environmental Factors	Environmental Engineer
10-12	Environmental Issues	Public Health
9	Ecology Unit	Protecting Natural Resources
10	Sustainable Energy	Renewable Energy
11-12	Environmental Science	Protecting Natural Resources
11-12	AP Environmental Science	Protecting Natural Resources
11-12	Human Population and Food Production	World Health

6. A.P. Environmental Science - For schools serving grades 9-12, do you provide an A.P. Environmental Science course? **(x) Yes ( ) No**

Provide the percentage of last year's eligible graduates who completed the course during their high school career: 7%	Percentage scoring 3 or above: 100%

PROFESSIONAL DEVELOPMENT

7. Certification - For each certification listed below, provide the number of teachers in each grade who are certified and the year certified. If needed, add additional rows as needed.

Certification	Grade (# Teachers) Year; Grade (# Teachers) Year:…
Project WET	9-12 (2)
National Board Certified Adolescent Science	9-12 (2)
Project Lead the Way	9-12 (2)
Green Classroom Professional (GCP)	District Personnel (1)
Certified Energy Manager (CEM)	District Personnel (1)
Leadership in Energy & Environmental Design Accredited Professional (LEED AP)	District Personnel (2)

8. Workshops Attended - In the table below, list workshops in which teachers participated in the last three years. Include the number of teachers, their grades and the year of participation. Add rows as needed. Categorize the workshops using the list provided in the directions. Webinars and online course will also count.

Workshops (Category 1, 2, or 3)	Grade (# Teachers) Year; Grade (# Teachers) Year:…
Modeling Chemistry (Category 3)	9th-12th, (1) 2013
Envirothon State Competition (Category 3)	9th-12th, (1) 2014
Next Gen Science Standards 1 teacher/9th-12th 2015 (Category 3)	9th-12th, (1) 2015
AP Chemistry Workshop (Category 3)	9th-12th, (1) 2015
MO Department of Conservation(Category 1, 2, 3)	9th-12th, (1) 2015
Assessment Literacy Series (Category 3)	9th-12th, (1) 2016
National Science Teachers Association National Conference (Category 2, 3)	9th-12th, (1) 2016
Envirothon Team Training Overnight (Category 3)	9th-12th, (1) 2014, 2015, 2016
Envirothon Team Training Soil Testing	9th-12th, (1) 2014, 2015, 2016

9. Workshops and Lessons Provided- In the table below, for the last three years, list workshops (title and event) given by a teacher or a lesson which they published in media widely available to the public. For workshops provide the title, venue and estimated number of attendees. For lessons provide the title and a link. Add rows as needed.

Workshops or Lessons	# Attendees
Summer STEM Academy for Educators - “Green Homes” - Ranken Technical	20
New Science Standards - UMSL	11
Soil Testing for Urban Students	11
Abiotic Testing at Shaw Nature Reserve	11
Differentiating in the Biology Classroom- the Outdoor Experience - Parkway North High	4
Creating Sustainable Schools - Webster University	10

OUTDOOR LEARNING EXPERIENCES

10. Outdoor Learning - For each grade briefly describe a meaningful outdoor experience and the subject standards to which it connects.

Grade	Outdoor Experience (Subject Standard – Missouri Course Level Expectations)
9	Water testing at Creve Coeur Lake (4.1.C., 4.1.D, 7.1.B, 7.1.C,7.1.D)
10-12	Soil Testing (4.1.C., 7.1.B, 7.1.C,7.1.D)
10-12	Species Counts of Birds (4.1.B., 4.1.B, 7.1.B, 7.1.C,7.1.D)
10-12	Species Counts of Insects (4.1.B., 4.1.B, 7.1.B, 7.1.C,7.1.D)
10-12	Forestry Management (4.1.B., 4.1.B, 7.1.B, 7.1.C,7.1.D)
10-12	NonWoody Plant Biodiversity (4.1.B., 4.1.B, 7.1.B, 7.1.C,7.1.D)
10-12	Invasive Species at Beckemeier (4.1.C., 7.1.B, 7.1.C,7.1.D)
10-12	Hog Hollow Water Plant (4.1.C., 7.1.B, 7.1.C,7.1.D)
10-12	Experimental Design on Environmental Issues (7.1.B, 7.1.C,7.1.D)

Strand 4: Changes in Ecosystems and Interactions of Organisms with their Environments – population growth, interdependence, changes in the environment, diversity
Strand 7: Scientific Inquiry – gathering evidence from qualitative and quantitative observations, evaluation of laws, principle, theories and models in light of evidence, communication of results and justification of explanations

11. Context & Community - Describe how outdoor learning is used to teach an array of subjects in context, engage the broader community, and develop civic skills.

Context: Soil Testing - Students collect samples and examine soil horizons. We test soil for components such as Nitrogen and Potassium and make recommendations to Parkway groundskeepers. We test local water sources like Creve Coeur Lake and Suson Park. We share our abiotic and biotic findings with management, suggesting areas of improvement.

Community: Students test soil, air, or water, and are required to share a summary of their findings with the landowners. We have written to our local school board regarding Green Building ideas for new construction in our district, parks management, and homeowners to make improvements to soil, water, or enhance biodiversity.

COMMUNITY ENGAGEMENT

12. Community Engagement - Describe students' civic/community engagement projects integrating environment and sustainability topics.

We sponsored an appliance recycling drive in February of 2016 as part of Lexus Eco Challenge. We tested soil samples from homes in our district, notifying owners of the quality of their soil. We completed biotic and abiotic testing of the River's Edge Park in Chesterfield, notifying the park director of our findings and providing suggestions. Environmental Science students conduct a 4 month research project that monitors the health of Creve Coeur Creek. Students design bulletin boards in our hallways, highlighting a different environmental subject each month and educating all students at Parkway North of the importance of conservation.

13. Partnerships - Describe your partnerships to help your school and other schools achieve in the 3 Pillars. Include both the scope (the size and diversity of audiences reached) and impact (what kind of change and how much was there) of these partnerships.

One partnership is with the Missouri Department of Conservation (MDC). MDC offers a vast array of workshops and personal classroom visits. Our MO Botanical Gardens has also provided opportunities for both students and staff, including loaning equipment for outdoor aquatic experiences and providing field guides. We are grateful to Missouri American Water for their support in both the classroom and field experiences. Each teacher being trained in these programs teaches over 100 students per semester, impacting 200 students per academic year. With three or four teachers being involved in each group, the scope of impact is tremendous.

OVERALL EDUCATION IMPACT

14. Education Summary – Summarize your school's top accomplishments in curriculum, professional development, outdoor learning, and community engagement. Be sure to include any innovative efforts or efforts not included already in this section. (200 words max)

A distinctive aspect of our teaching at Parkway North is how often it leads to student-initiated projects to benefit the school and the community. Composting, which is a district wide initiative, originated with the North region as a result of a student presentation made to the superintendent. Students were involved in the outdoor LED lighting upgrade, demonstrating efficient technologies and STEM learning opportunities. Classroom speakers include those in the field of environmental engineering as well as those in the rapidly expanding field of solar energy, so students get frequent exposure to careers in environmental fields.

We not only have multiple award winning environmental clubs as demonstrated by our Lexus Eco-Challenge and Envirothon teams, but we also integrate these learning opportunities throughout our curriculum. This curriculum extends beyond science and into all areas. For example, our English curricula requires a Recycling Project and our PE department has a demonstrated commitment to outdoor education.

Faculty members are engaged in protecting the planet as well, whether it's through their regular professional development with the MO Department of Conservation or Missouri Botanical Gardens, a trip to waste management facilities or mine reclamation areas, or just a casual comparison of the most efficient mode of transportation. They translate these experiences into teaching students and then translate the experience of teaching students about the environment into professional development for other educators.

Our students are the main conduit of environmental knowledge and practice to the community. Starting at "home" Students design bulletin boards in our hallways, highlighting a different environmental subject each month and educating all students at Parkway North of the importance of conservation. As part of their Lexus Eco Challenge participation, students organized an appliance recycling drive in February of 2016. Students tested soil samples from homes in our district, notifying owners of the quality of their soil. They completed biotic and abiotic testing of the River's Edge Park in Chesterfield, sharing their findings and recommendations with the park director. Environmental Science students conducted a 4 month research project that monitored the health of Creve Coeur Creek.

Sustainability is the philosophy of Parkway North - to be stewards of Earth. Our integration of sustainability throughout our curriculum and the impact students have on their community show it is an achievable objective.

MEDIA

15. Media - Submit up to 4 photos (with appropriate signed permissions) or up to 4 minutes of video content to illustrate your schools' efforts. Include a list with a brief description below for each item.

1. Deforestation Bulletin Board: A bulletin board in the main hallway, designed by Environmental students each month

2. Drinking Water Plant: Parkway North Students at the intake area of Missouri American Water Company on the Missouri River

3. Bonne Terre Mines: Parkway North Science Teachers on a field trip to Bonne Terre Mines, learning about mine reclamation

4. Electronics Recycling: Parkway North's Lexus Eco Team endure frigid temperatures for a successful February Recycling Drive.