

# Green Ribbon

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

---

For Public Schools only:  Charter  Title I  Magnet  Choice

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

Official School Name School of Environmental Studies  
(As it should appear in the official records)

School  
Mailing Address 12155 Johnny Cake Ridge Rd  
(If address is P.O. Box, also include street address.)  
Apple Valley, MN 55124

County Dakota State School Code Number\* N/A

Telephone (952) 431-8750 Fax (952) 431-8755

Web site/UR www.district196.org/ses E-mail dan.bodette@district196.org

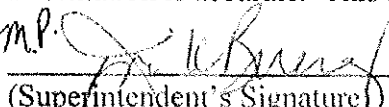
I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

 Date 1/31/13  
(Principal's Signature)

Name of Superintendent\* Ms. Jane K. Berenz  
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

District Name\* Independent School District 196 (Rosemount-Apple Valley-Eagan Public Schools)  
Tel. (651) 423-7700

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

 Date January 28, 2013  
(Superintendent's Signature)

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

**PART II – SUMMARY OF ACHIEVEMENTS**

**Instructions to School Principal**

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

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

**Instructions to Nominating Authority**

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

**Nominating Authority's Certifications**

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

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

Name of Nominating Agency

Minnesota Department of Education

Name of Nominating Authority

Dr. Brenda Cassellius

(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

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

school meets the provisions above.

  
(Nominating Authority's Signature)

Date 2-12-13

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

OMB Control Number: 1860-0509  
Expiration Date: February 28, 2015

#### **Public Burden Statement**

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

## **Part II: Summary of Achievements for The School of Environmental Studies**

Created in 1995 in a unique partnership between Independent School District 196, the City of Apple Valley, and the Minnesota Zoo, the School of Environmental Studies (SES) strives to be a community of leaders learning to enhance the relationships between people and their environments. SES is a public, inquiry-based, interdisciplinary magnet school of 423 juniors and seniors focused on environmental and sustainability literacy. We are a green school, fostering active citizen leaders who are prepared to bring change to the world.

Our building, with a wealth of windows and open spaces, connects us to the natural world. Our school site, a 10-acre forested plot adjacent to the Minnesota Zoo and Lebanon Hills Regional Park, offers an exciting learning laboratory for our students. We aim to place students in the world beyond our walls.

### **Pillar I: Environmental Impacts**

The building was designed and constructed in the greenest way possible in 1995. We continue to work to reduce environmental impacts and maintain energy efficiency. Our students are an integral part of this process as they study these issues and suggest and implement solutions through their senior projects.

We have made strides in energy reduction. Our unique heating system utilizes waste heat from the Minnesota Zoo. Students monitor energy that feeds into the grid from our demonstration 20kw wind turbine and 2kw solar panels, in partnership with Dakota Electric Association. We have natural landscaping and use our pond for irrigation to reduce impact.

Waste management is incorporated into our curriculum, resulting in a 76% diversion of solid waste. The increased use of web-based systems like Moodle and Google Collab brings us closer to our goal of being a “paperless” school.

### **Pillar II: Health and Wellness**

In addition to studies in environmental health and indoor air quality, SES has many health and wellness initiatives. Our school nurse has led this charge as part of our teaching staff, offering lessons and courses for students and staff. Our food service manager is committed to healthy eating. We participate in the Farm to School program, serve a local lunch once a month and purchase Fair Trade, Food Alliance, health and safety certified, fresh fruits and vegetables. Our Diversity Club puts on an international lunch twice a year to introduce students to global cuisine.

Outdoor activity is a hallmark of our school. Our students have the opportunity to hike, bike, canoe and camp as part of the curriculum. Our field studies incorporate physical activities. Many student-generated clubs are fitness-oriented, such as Yoga Club, Mountain Biking Club, Climbing Club and our BSA Venturing Crew.

### **Pillar III: Environmental and Sustainability Education**

Environmental and sustainability literacy are the heart of our curriculum. All students take two full years of Environmental Studies, an interdisciplinary course integrating English, social studies, and environmental science, for three hours each day. Juniors explore the relationship between humans and the natural world and seniors focus on social and environmental systems, and their individual and collective capacity for action and civic participation.

Students engage in authentic assessments that take them out of the classroom, from the juniors studying local ponds in conjunction with water resource professionals to seniors studying biodiversity with biologists at Fort Snelling State Park. The Senior Capstone experience includes a personal ethic, an environmental service project, and a public presentation of an environmental issue.

The School of Environmental Studies is a school “in the world.” Our students engage in field studies in many international venues from Costa Rica to South Africa, as well as local studies in the Boundary Waters and Superior Hiking Trail of Northern Minnesota. SES is the only high school in the world that has sent student delegations to United Nations COP Conferences on climate change in Copenhagen, Cancun and Qatar. Students have studied in Bangladesh through the American Youth Leadership Program of the US State Department. Students studied climate change on Baffin Island with Will Steger, and brought students from Baffin Island to our school.

Students also engage in the world through “real-world” faculty. Our students work with professionals from organizations such as the Will Steger Institute, the Minnesota Design Team, the Department of Natural Resources, and the Minnesota Zoo. We have an organic community garden and apiary in partnership with Apple Valley citizens. We have a Mentor Program that places students in mentorships with community professionals in a variety of careers.

Truly, the School of Environmental Studies is living its mission: dedicated to the development of active citizen leaders who are environmentally informed, self-perpetuating learners connected to the local and global community.

**School of Environmental Studies, Apple Valley, Minnesota**

**Summary of Evaluations**

Each of Minnesota's fourteen 2012-13 GRS applications were reviewed by three MDE GRS Advisory Group Members based on the USED scoring rubric template.

While not nominated in 2012, the School of Environmental Studies was a Minnesota finalist in the first year of GRS. They again ranked very high this year in our evaluation and were the top scoring application. They scored solidly across all three pillars. Their work in Pillar 3, which has been stellar since they opened their school in 1995, has no equal among Minnesota high schools. Here is what the evaluators said about the application:

- This application correlates directly with the Green Ribbon Schools criteria. There really are no evident weaknesses for this proposal.
- The application provides very clear and detailed descriptions of the programs and curriculum the students participate in. The school demonstrated that they seriously take every effort to be environmental conscious. They provided good examples of community involvement. The reduction of waste and alternative transition responses were good. Program participation that benchmarks progress, many awards, recognition.
- As a school founded on the concepts that define Pillar III, this is an exemplary Pillar III school, addressing all the areas extremely well. The school provides an exceptional amount of outdoor classroom activities. They do a lot of global studies too. Extremely strong focus on interdisciplinary EE learning, incorporated into curriculum and assessments. Demonstrates good programs with community partnerships.
- 31% GHG reduction in electricity, Energy star participation >75, 16% energy reduction in last year, demonstration wind, and solar. 50% reduction in domestic water use, no municipal water used for irrigation- from rainwater and pond, strong water efficient landscape reported. 76.49% diversion rate of waste, 30% post-consumer paper, 100% chlorine free, 80% 3rd party green cleaning. Very advanced level of waste diversion, advanced level of green cleaning.
- 70% non-single passenger vehicle transportation, transportation-air quality policies addressed, E-85 school van, use of mass transit for some remote site classes
- No pesticide use, IPM, hazardous exposure reduction strategies, strong IAQ and radon strategies/monitoring, good IEQ summary
- USDA's Healthier US School Challenge Silver level 2010, other health programs, outdoor classes and outdoor physical activity, organic food

## School/District Contact Information

Independent School District Number (if applicable): **196**

School/District Name: **School of Environmental Studies**

Street Address: **12155 Johnny Cake Ridge Road**

City/State/Zip: **Apple Valley, MN 55124**

Website: **http://www.district196.org/ses**

Superintendent Name: **Jane Berenz**

Superintendent Email Address: **Jane.Berenz@district196.org**

Phone Number: **651-423-7700**

Principal Name (not required for district-wide applications): **Dan Bodette**

Principal Email Address: **Dan.Bodette@district196.org**

Phone Number: **952-431-8750**

Lead Applicant Name (if different): **Jane Tunseth**

Lead Applicant Email: **Jane.Tunseth@district196.org**

Phone Number: **952-431-8750**

Type of Award applying for (choose only one): <input checked="" type="checkbox"/> Individual School <input type="checkbox"/> District-Wide, Multi-School			
Level <input type="checkbox"/> Elementary (PK - 5 or 6) <input type="checkbox"/> K - 8 <input type="checkbox"/> Middle (6 - 8 or 9) <input checked="" type="checkbox"/> High (9 or 10 - 12)	School Type <input checked="" type="checkbox"/> Public <input type="checkbox"/> Private/Independent <input type="checkbox"/> Charter	How would you describe your school? <input type="checkbox"/> Urban <input checked="" type="checkbox"/> Suburban <input type="checkbox"/> Rural	Total Enrolled: <b>423</b>
Does your school serve 40% or more students from disadvantaged households? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	% receiving FRPL: <b>15%</b> % limited English proficient: <b>0%</b> Other measures: Click here to enter text.		Graduation rate: <b>98%</b> Attendance rate: <b>96%</b>

**Application Outline:**

<b>ED-GRS Pillars and Elements</b>	<b>Points</b>
Cross-Cutting Question: Participation in green school programs	5 points
<b>Pillar I: Reduce environmental impact and costs: 30%</b>	
Element 1A: Reduced or eliminated greenhouse gas (GHG) emissions (preference for schools that have used <u>State of Minnesota B3 Benchmarking</u> ) Energy Buildings	15 points
Element 1B: Improved water quality, efficiency, and conservation Water Grounds	5 points
Element 1C: Reduced waste production Waste Hazardous waste	5 points
Element 1D: Use of alternative transportation	5 points
<b>Pillar II: Improve the health and wellness of students and staff: 30%</b>	
Element 2A: Integrated school environmental health program Integrated Pest Management Contaminant controls and Ventilation Asthma control Indoor air quality Moisture control Chemical management	15 points
Element 2B: Nutrition and fitness Fitness and outdoor time Food and Nutrition	15 points
<b>Pillar III: Provide effective environmental and sustainability education, incorporating STEM, civic skills and green career pathways: 35%</b>	
Element 3A: Interdisciplinary learning about the key relationships between dynamic environmental, energy and human systems	20 points
Element 3B: Use of the environment and sustainability to develop STEM content, knowledge, and thinking skills	5 points
Element 3C: Development and application of civic knowledge and skills	10 points
<b>Total</b>	<b>100 points</b>



### Cross-Cutting Programs

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

Yes  No Program(s) and level(s) achieved: **Green School Alliance (Climate Champion); Schools for Energy Efficiency, Minnesota Schools Cutting Carbon**

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

Yes  No Award(s) and year(s): **US Department of Education "New American High School Showcase Site" (1999), Accreditation by the United Nations Conference of the Parties on Climate Change (2009, 2010, 2012), Energy Star Leader (2009), Dakota County recognition for Environmental Education and Water Quality Resource Education (multiple years), Minnesota Envirothon State participation (multiple years)**

### Pillar I: Reduced Environmental Impact and Costs

**Energy** (please note that preference will be given to schools that have used the State of Minnesota B3 Benchmarking)

1. Can your school demonstrate a reduction in Greenhouse Gas emissions?

Yes  No Percentage reduction: **31%** Over (mm/yyyy – mm/yyyy): **01/2011 – 12/2011**  
Initial GHG emissions rate (MT eCO<sub>2</sub>/person): **.84 368 MT/440 people**

Final GHG emissions rate (MT eCO<sub>2</sub>/person): **.56 253 MT/440**

Offsets: Click here to enter text. How did you calculate the reduction? **EPA Carbon Calculator, electricity only**

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

Yes  No Year(s) and score(s) received: **2012 >75**

3. Has your school reduced its total non-transportation energy use from an initial baseline?  Yes  No

Current energy usage (kBTU/student/year): **1.73 kBTU/student/year**

Current energy usage (kBTU/sq. ft. /year): **.01 kBTU/student/year**

Percentage reduction: **16%** Over (mm/yyyy – mm/yyyy) 01/2012 – 12/2012

How did you document this reduction? **District report**

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

On-site renewable energy generation **0**: Type: Click here to enter text.

Purchased renewable energy: **0** Type: Click here to enter text.

Participation in USDA Fuel for Schools, DOE Wind for Schools or other federal or state school energy program: Click here to enter text.

5. In what year was your school originally constructed? **1994**

What is the total building area of your school? **68,000 sq. ft.**

6. Has your school constructed or renovated building(s) in the past ten years?  Yes  No

For new building(s): Percentage building area that meets green building standards: Click here to enter text.

Certification and level: Click here to enter text. Total constructed area: Click here to enter text.

For renovated building(s): Percentage of the building area that meets green building standards: **10%**

Certification and level: Click here to enter text. Total renovated area: **4000 sq. ft. (music production studio and computer lab)**

#### **Water and Grounds**

7. Can you demonstrate a reduction in your school's total water consumption from an initial baseline?

Average Baseline water use (gallons per occupant): **4**

Current water use (gallons per occupant): **2**

Percentage reduction in domestic water use: **50%**

Percentage reduction in irrigation water use: **0% (Please note that we have no irrigation system; water for landscaping and garden is collected from rainwater and the school's pond)**

Time period measured (mm/yyyy – mm/yyyy): **01/2012 – 12/2012**

How did you document this reduction (i.e., ENERGY STAR Portfolio Manager, utility bills, school district reports)? **District reports**

8. What percentage of your landscaping is considered water-efficient and/or regionally appropriate? **90%**  
Types of plants used and location: **school pond with native aquatic plants in buffer around perimeter, native prairie forbs and grasses in unmowed areas along parking lots, perennial plantings at building entrance, school forest, community garden, apple trees**

9. Describe alternate water sources used for irrigation. (50 words max)

**Water pumped from Birch Pond, on school site, is used for irrigation of landscaping, the community garden, and school orchard. Rainwater is also collected.**

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

**Parking lots are surrounded by natural prairie plantings. A community garden and rain gardens also help control runoff. Native shoreline plants have been planted as a buffer around the pond. Large areas of school landscape are unmowed.**

11. Our school's drinking water comes from:

- Municipal water source
- Well on school property
- Other: Click here to enter text.

How often is the school's drinking water tested for possible contaminants? (50 words max)

**Tested monthly by the City of Apple Valley and annually by the school district Health and Safety Department.**

12. Describe how the water source is protected from potential contaminants. (50 words max)

**The City of Apple Valley controls the quality of the drinking water.**

13. Describe the program you have in place to control lead in drinking water. (50 words max)

**The City of Apple Valley tests the water monthly. The District 196 Health and Safety Department checks drinking water once a year. SES has been in compliance since the opening of the school in 1995.**

14. Describe how the school grounds are devoted to ecologically beneficial uses. (50 word max)

**As a "classroom," the school grounds contain a rich variety of natural areas for teaching and learning as well as to create a healthy ecological system. SES has a pond, an oak-birch forest, natural prairie landscaping, a community vegetable garden, apple trees, an apiary, and a perennial garden.**

#### **Waste**

15. What percentage of solid waste is diverted from landfilling or incinerating due to reduction, recycling and/or organics diversion (food to people, food to hogs and/or composting)? Note that Minnesota Statutes, section 115A.151 requires that schools must recycle a minimum of three material types. Complete all the calculations below to receive points.

A - Monthly garbage service in cubic yards (garbage dumpster size(s) x number of collections per month x percentage full when emptied or collected): **12.6 cubic yards**

B - Monthly recycling volume in cubic yards (recycling dumpster sizes(s) x number of collections per month x percentage full when emptied or collected): **38 cubic yards**

C - Monthly organics diversion (food to people, food to hogs and/or composting) volume(s) in cubic yards (leftover food collection bin/food scrap and/or soiled paper dumpster size(s) x number of collections per month x percentage full when emptied or collected): **3 cubic yards**

Recycling and Diversion Rate =  $((B + C) \div (A + B + C)) \times 100$ : **76.49 %**

Monthly waste generated per person = (A/number of students and staff): **.026 cubic yards**

16. What percentage of your school's total office/classroom paper content by cost is post-consumer material or fiber from forests certified as responsibly managed by the Forest Stewardship Council (If a product is only 30% recycled content, only 30% of the cost should be counted)? **30%**

17. What percentage of the total office/classroom paper content by cost is totally chlorine-free (TCF) or processed chlorine free (PCF)? **100%**

18. List the types and amounts of hazardous waste generated at your school. (Note that Minnesota Statutes, section 121A.33 bans mercury in Minnesota schools.)

Flammable liquids	Corrosive liquids	Toxics	Other
<b>Chemicals for chemistry class (less than a pint per year)</b>	<b>Chemicals for chemistry class (less than a pint per year)</b>	<b>Photography chemicals (about 5 gallons per year)</b>	<b>Fluorescent light bulbs (about 100 per year), batteries (about 50 per year)</b>

How is this measured? **Our chemistry teacher neutralizes most hazardous chemicals used in chemistry class, and collects and stores the rest for disposal. Our building chief counts and measures these items.**

How is hazardous waste disposal tracked and where was it disposed? **Waste is tracked by the building chief, collected by the District 196 Health and Safety Department, and sent to a contracted recycling company.**

Describe other measures taken to reduce solid waste and eliminate hazardous waste (i.e., bottled water campaign, food waste reduction, etc.) (100 word max)

**Recycling containers are located throughout the building (approximately 1 container per 10 students). Lunch waste is sorted into trash, recyclables and compostables. Proper recycling practices are taught to all juniors, and signs are posted throughout the building to remind students. Waste management is a three-week unit of study for seniors. Students analyze contributions to the waste stream, and work on methods of reduction. Students have initiated composting projects, and the school has several composting bins. "Green" alternatives are used whenever possible in chemistry and other lab activities. Obsolete electronics, used fluorescent light bulbs and batteries go to a district-contracted recycler.**

19. Which green cleaning custodial service standard is used (i.e., Green Seal Standard for Commercial and Institutional Cleaning Services (GS-42), the ISSA Cleaning Industry Management Standard – Green Building)?

**Green Seal Standard for Commercial & Institutional Cleaning Services**

What percentage of all products is third-party certified? **80%**

What specific third party certified green cleaning product standard does your school use?

**We use Spartan Green Solutions products, all certified by Green Seal and the EPA Design for the Environment.**

### **Alternative Transportation**

20. What percentage of your students walk, bike, bus, or carpool (2 or more students in the car) to/from school? (Note if your school does not use school buses.) **70%**

How is this data calculated? (50 word max)

**Survey administered to all students with the categories listed in the prompt. Students could provide a scaled response, such as they carpool 80% of the time and bus 20%. The 70% is an average for "any given day." The location of the school makes walking to/from home very difficult.**

21. Has your school implemented any of the following? Check all that apply.

Designated carpool parking stalls.

A well-publicized no idling policy that applies to all vehicles (including school buses).

Vehicle loading/unloading areas are at least 25 feet from building air intakes, doors, and windows.

Safe Pedestrian Routes to school or Safe Routes to School.

Describe activities in your safe routes program and other events to encourage students to walk, bike or carpool, including number of participants. (50 word max)

**Student Council sponsors a "bike/walk to school day" each spring along with several days of "carpool counts" with small prizes as incentives.**

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

**The school's van, which burns E85 fuel, is used for fieldwork, along with carpooling, biking or walking. Student Council hosts an annual "walk/bike to school day" and periodically offers rewards for carpooling. All seniors study sustainable transportation and take mass transit to the University of Minnesota for a sustainability study.**

23. Describe any other efforts toward reducing environmental impact, focusing on innovative or unique practices and partnerships. (100 word max)

**Students monitor energy that feeds into the grid from our demonstration 20kw wind turbine and 2kw solar panels, in partnership with Dakota Electric. SES is heated with waste heat from the Minnesota Zoo. We have an organic community garden and apiary in partnership with Apple Valley citizens. We have disconnected lights, rely on natural lighting as much as possible, use a remote timer to fire the art room kiln at off-peak hours, and encourage students and staff to turn lights off. The increased use of web-based systems like Moodle bring us closer to our goal of being a "paperless" school.**

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

**Environmental Health**

1. What is the volume of your annual pesticide use (gallons/student/year)? **0**

Describe your efforts to reduce use: **We use only bait traps and live traps for pests, no chemical applications.**

2. Which of the following practices does your school employ to minimize use of and exposure to pesticides? Provide specific examples of actions taken for each checked practice.

√ Our school has an integrated pest management plan in place to reduce and/or eliminate pesticides and pest control policies, methods of application, and posting requirements are provided to parents and school employees in accordance with the Janet B. Johnson Parents' Right-to-Know Act (Minn. Stat. § 121A.30).

**SES follows the school district IPM plan as posted on the district website.**

√ Copies of pesticide labels, copies of notices, MSDS and annual summaries of pesticide applications are all available and in an accessible location.

**All information is posted in the custodial area.**

√ Our school prohibits children from entering a treated area for at least 8 hours after the treatment or longer if required by the pesticide label.

**Areas are only treated when school is not in session, during summer or weekends.**

3. Which of the following practices does your school employ to minimize exposure to hazardous contaminants? Provide specific examples of actions taken for each checked practice.

√ Our school has a comprehensive indoor air quality management program that is consistent with Minnesota Department of Health best practices which are based on EPA's IAQ Tools for Schools.

**IAQ is monitored daily by the building chief and managed according to MN Dept of Health best practices.**

√ Our school prohibits smoking on campus and in public school buses.

**Smoking is not allowed; signs are posted.**

√ Our school is in compliance with Minnesota Statutes, section 121A.33 and has identified and properly removed sources of elemental mercury and prohibits its purchase and use in the school. (This does not apply for fluorescent bulbs, mercury thermostats, switches and gauges for HVAC systems.)

**There is no mercury at SES.**

√ Our school uses fuel burning appliances and has taken steps to protect occupants from carbon monoxide (CO).

**We have no fuel-burning appliances.**

√ Our school does not have any fuel burning combustion appliances.

**We have a converter, but no combustion appliances. Our heat comes from waste heat generated at the Minnesota Zoo and piped into the building.**

√ Our school has tested all frequently occupied rooms in the last five years at or below ground level for radon gas and has fixed and retested all rooms with levels that tested at or above 4 pCi/L.

**The district checks for radon every two years, and SES has never had levels at or above 4**

√ Our school has identified and properly manages or has removed, where applicable, asbestos-containing materials, according to U.S. EPA AHERA regulations and, where applicable, the Minnesota Department of Health asbestos abatement rules.

**There is no asbestos in the building, even in the floor tiles.**

√ Our school has identified and properly removed sources of lead according to the U.S. EPA's Renovation, Remodeling and Painting Rule where lead containing paint may be disturbed in areas used by children under the age of six.

**There is no paint that contains lead in the building.**

√ Our school has identified any wood playground or other structures that contain chromate copper arsenate and has taken steps to eliminate exposure.

**There are no wood structures containing chromate copper arsenate. All wood structures outside are made of cedar and recycled plastic lumber.**

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

**Hazardous materials are stored in locked metal cabinets, with appropriate signage and labels. MSDS sheets are posted in chemical storage areas and in the custodial area. Staff are educated annually in "Right to Know" workshops. "Green" chemistry is practiced whenever possible by using chemicals with less hazardous characteristics. The chemistry teacher, as our Environmental Safety Officer, monitors the use and disposal of all hazardous chemicals along with our building chief.**

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

**The air filtration system helps prevent exposure, along with our ventilation and exhaust systems. We don't allow smoking on school property. We have not had issues with mold but watch for it regularly. The building chief regularly monitors and cleans filters, fans, dampers and ductwork.**

6. Describe actions your school has taken to have your school bus fleet retrofitted with cleaner burning engines or to acquire cleaner burning buses or fuel.

**Not applicable, because the district owns the buses. We do have a school van that burns E85 fuel.**

7. If your school owns or operates an indoor ice arena, describe your compliance with state laws regarding certification, routine testing and other steps you have taken to maintain acceptable air quality.

**Not applicable.**

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

**We have a computerized energy management system that monitors humidity hourly. The building chief inspects windows daily for excess moisture and adjusts accordingly; we have had very few issues with condensation. Roof leaks are repaired promptly. No mold has been found since the building opened.**

9. Our school has working local exhaust systems for major airborne contaminant sources.  Yes  No

**We have an air filtration system to control potential contaminants, monitored through a computerized system checked regularly by the building chief. There are systems in the art room to eliminate potential contamination from the kiln and a hood system in the chemistry lab. There are exhaust fans in the bathrooms and kitchen.**

10. Describe actions your school takes to ensure that all classrooms and other spaces are adequately ventilated with outside air, consistent with state or local codes, or national ventilation standards (Minnesota State Mechanical Code/American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE) guideline or 15 cubic feet per minute (cfm) of fresh air per occupant). Describe your school's practices for inspecting and maintaining the building's ventilation system and all unit ventilators to ensure they are clean and operating properly. (100 word max)

**The district has a comprehensive preventive maintenance schedule, so the building is regularly inspected. There are monthly maintenance checks of all ventilators, filters, fans and ductwork, and the building chief cleans all parts of the system as needed. The computerized energy management system monitors ventilation hourly, and the building chief makes adjustments as needed.**

11. Describe steps your school takes to protect indoor environmental quality, such as access to daylight, lighting quality, views to nature, acoustics, thermal comfort, etc. (200 word max)

**The school's design is open and natural. The lower level has a vaulted wood ceiling and two-story windows with views of the pond and forest. The common area features a "living wall" of plants, and several aquariums. The academic areas also feature large aquariums maintained by students, as well as the "pets" (reptiles and fish) that students can bring to keep at their workstations. Students are based in four "houses," each filled with daylight from a series of windows with views of the woods and indirect light from the openings overlooking the lower level. The many large, energy-efficient windows also offer some radiant heat the sunlight provides a warm atmosphere. Ceiling tiles, carpeting and wallpapered "hip" walls enhance the acoustics and provide a comfortable feeling in the open spaces.**

12. Describe any other actions your school takes to do periodic, comprehensive inspections of the school facility to identify environmental health and safety issues and take corrective action. (200 word max)

**Our computerized energy management system is constantly monitoring for environmental issues, and the building chief is constantly checking the system. Corrective action is taken immediately. Indoor air quality is a unit of study for seniors, and they use monitoring kits to take measurements throughout the building and analyze results.**

### **Nutrition and Fitness**

13. Which practices does your school employ to promote nutrition, physical activity and overall school health? Provide specific examples of actions taken for each checked practice, focusing on innovative or unique practices and partnerships. (100 word max each)



√ Our school participates in the USDA's Healthier US School Challenge.  
Level and year: **Silver level 2010**

√ Our school participates in a Farm to School program to use local, fresh food.  
**We have "local lunch" once a month and serve local fruits and vegetables.**

√ Our school has a fruit, vegetable and greens salad bar.  
**Color-coded signs encourage students to choose fruits and vegetables.**

√ Our school has an on-site food garden.  
**The garden is a community partnership between the school and citizens of Apple Valley.**

√ Our school garden supplies food for our students in the cafeteria, a cooking or garden class or to the community.

**District health regulations do not let us serve food from the community partnership garden for school lunches, but students have the opportunity to take produce home. Food also is donated to the local food shelf. The garden is a learning space for students to learn about organic, sustainable agriculture.**

√ Food purchased by our school is certified as "environmentally preferable" (certified organic, Fair Trade, Food Alliance or Rainforest Alliance).

Percentage: **100%** Type: **Fruits and vegetables are Fair Trade, Food Alliance, health & safety certified, and fresh.**

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

[Click here to enter text.](#)

√ At least 50% of our students' annual physical education takes place outdoors.

**Our students participate in day-long events such as canoeing, biking, and hiking several times a year. We offer two physical education courses, Winter and Spring Outdoor Recreation, which are completely outdoors. Students also participate in field studies that incorporate outdoor activities, such as canoeing in the Boundary Waters, hiking the Superior Hiking Trail, diving in Roatan, etc.**

√ Health measures are integrated into assessments.

**Some courses, such as Lifetime Fitness and the Outdoor Recreation courses, incorporate such assessments.**

At least 50% of our students have participated in the EPA's Sunwise program (or equivalent UV protection and skin health education program).

**Not this specific program, but we do address UV protection and the issues of sunburn whenever we participate in outdoor activities.**

14. Describe the type of outdoor education, exercise and recreation available, including features such as trails, natural playgrounds, gardens, habitat projects and outdoor classrooms and the average number of minutes your students are outside each week. (100 word max)

**Our 12-acre school site contains a student-maintained trail system, heavily used for fieldwork. Students have class outside on average 5 hours a week. Sometimes they are outside for 3 hours daily for several weeks, such as in our pond, forest, biodiversity, and winter study units. We have an outdoor classroom that is used daily in the fall and spring and a small outdoor amphitheater. The school owns several canoes and a boat. Twice a year we have “field days” where the entire school is out canoeing, hiking and biking. Students work on many outside projects like gardening and buckthorn removal.**

15. Describe any other efforts to improve nutrition and fitness, highlighting innovative or unique practices and partnerships. (100 word max)

**We offer a class in partnership with the local Lifetime Fitness facility which encourages nutrition and exercise. We also offer courses in Wilderness First Aid and Human Medicine. Many student-generated clubs are fitness-oriented, such as Yoga Club, Mountain Biking Club, and Climbing Club. SES has a coed Venture Crew associated with Boy Scouts of America that is focused on high adventure and fitness. The staff participates in Journey Well, a district initiative through Health Partners to encourage wellness, with staff challenges like “10,000 Steps.” Our school nurse goes into classes and teaches about topics like Lyme Disease and eating disorders.**

### **Pillar 3: Effective Environmental and Sustainability Education**

1. Which practices does your school employ to help ensure effective environmental and sustainability education? Provide specific examples of actions taken for each checked practice, highlighting innovative or unique practices and partnerships.

√ Our school has an environmental or sustainability literacy requirement. (200 word max)

**All students take two full years of Environmental Studies, an interdisciplinary course integrating English, social studies, and environmental science, for three hours each day. Juniors explore the relationship between humans and the natural world, moving from a basic awareness of those interactions to understanding varying attitudes toward the environment, ultimately articulating their own relationship with the natural world. Seniors continue to build understanding of natural and human systems, focusing on the management of those systems, and their individual and collective capacity for action and civic participation. Seniors begin their year learning some basic principles of ecological literacy, and at the end of the year, they answer the question, “Sustainability considered: how, then, shall we live?” Through reading a wide variety of environmental texts, writing many papers, engaging in student-centered discussions, and completing many field and research-based projects, over the course of two years students develop solid problem solving and critical thinking skills that will equip them to be environmentally literate citizens. All seniors are required to complete a three-part Capstone: a personal statement of environmental ethic, an environmental service project, and a public presentation about a significant environmental issue.**

√ Environmental and sustainability concepts are integrated throughout the curriculum. (200 word max)

**Our vision is to be a community of leaders learning to enhance the relationships between people and their environments. In the creation of the curriculum that would carry that vision, the teachers who founded SES were influenced by David Orr's work on ecological literacy, E.O. Wilson's ideas of biodiversity and consilience and Fritjof Capra's ideas about systems theory. With this philosophical foundation, environmental and sustainability concepts were intricately woven throughout the entire two-year curriculum. The investigations in the junior year explore the relationships between organisms and their environments, specifically in ponds, rivers, oceans and forests. Juniors also explore the concepts of biological and cultural evolution, globalism and imperialism, and Western and non-Western philosophy, especially examining how our views of the natural world have changed throughout history. Seniors begin with an investigation the dynamics of diversity, including both biodiversity and cultural diversity, and the environmental impacts of human actions. They move to an exploration of the issues of population growth and human and environmental health, considering epidemiology and toxicology and their impacts on sustainability. They design sustainable cities, exploring sustainable futures, and ultimately articulate their own role as environmental leaders.**

√ Environmental and sustainability concepts are integrated into assessments. (200 word max)

**Every assessment for Environmental Studies addresses these concepts. Juniors collect data on local ponds, analyze the data, and present their findings to water resource professionals. They participate in a mock trial on the book *Ishmael* and a model UN about globalism and the environment. They write major papers about evolution and their personal environmental ethic. They teach district fourth graders about forest ecology. Seniors collect, analyze and present biodiversity data on our school site and Fort Snelling State Park. They use GIS and Vortex to assess populations. They plan and participate in a conference on population, presented to faculty, students, alumni and local experts. They write a research paper on environmental health, and evaluate local communities for sustainability. The Capstone previously mentioned is the culminating senior assessment.**

√ Students evidence high levels of proficiency in these assessments. (100 word max)

**85% of our juniors and 80% of our seniors display average grades of C or higher in Environmental Studies.**

√ Professional development in environmental and sustainability education is provided to all teachers. (200 word max)

**Because we work in a collegial setting and teach in teams, teachers constantly learn from each other and professional development occurs informally on a daily basis. In-building workshops six times a year allow for faculty discussions on current topics related to environmental education. Staff have had the opportunity to take part in the Climate Change Institute sponsored by the Will Steger Foundation and hosted at our school during the past several summers. We participate in the Nobel Conference at Gustavus Adolphus College each October. Several of the staff have completed environmental education coursework through Hamline University. There are numerous opportunities for our teachers to participate in professional development.**

2. For schools serving grades 9-12, provide:
  - Percentage of last year's eligible graduates who completed the AP Environmental Science course during their high school career: **16%**
  - Percentage scoring a 3 or higher: **43%**
3. How does your school use sustainability and the environment as a context for learning across all academic disciplines; and in particular, in science, technology, engineering and mathematics thinking skills and content knowledge? And how are your green school efforts integrated into that learning? (200 word max)

**As stated previously, half of each student's day is spent in learning across the disciplines in Environmental Studies. The other half of the day is spent in elective courses such as chemistry, physics, mathematics, art, photography, French and Spanish. In those elective courses, teachers incorporate environmental concepts and topics wherever possible. For example, when juniors are studying ponds, they study water chemistry in chemistry. Math problems are often based on environmental or sustainability topics. Enhancing math literacy is a focus in our building, so students are asked to work with mathematical concepts and processes in almost all of our classes. All teachers incorporate green practices into their courses.**
4. How does your school use sustainability and the environment as a context for learning green technologies and career pathways? (200 word max)

**The senior curriculum offers a variety of opportunities to discover career pathways. All seniors work with Naviance, a planning tool that helps students discover their interests and find possible college and career paths. Through the topics presented in the senior curriculum, students learn about "green" (and "un-green") living as related to transportation, air quality, water quality, waste management, and technology.**
5. Describe students' civic/community engagement projects integrating environment and sustainability topics. (200 word max)

**As part of the capstone, each senior is required to complete a service project that will help the community; ideally they will partner with an outside agency in some aspect of their project. Senior projects have included working with Dakota Electric to bring the wind turbine to our campus, working with the City of Apple Valley to create our Partnership Garden, and creating a garden at the Eagan Resource Center. Students continue to work on a Birch Pond Restoration Project with the assistance of the Minnesota DNR, in stocking fish and planting native plants around our pond. Students annually assess the health of the Birch Pond ecosystem, with the guidance of one of our retired teachers. On field studies, students participate in conservation activities with local people in their communities, from building a sea turtle nursery in Costa Rica to cleaning up trash on the beaches of Roatan. Students also engage in community-based projects on Earth Day each year.**
6. Describe students' meaningful outdoor learning experiences at every grade level. (200 word max)

**As stated earlier, our students are outdoors for much of their two years at SES. In addition to spending several weeks studying pond ecology at local ponds, juniors spend a day collecting data at the Vermillion River and hike along the Mississippi River to learn about river ecology. They spend a day canoeing on the Cannon River. They explore the Minnesota Zoo exhibits to learn about animal behavior, adaptations and evolution. They spend a day and a night at Baker Near-Wilderness**

**Settlement in January, sleeping in cabins with no electricity and cooking meals outdoors, to learn about winter adaptations of animals and humans. They learn about organisms and ecology of the deciduous forest by spending several weeks of classes exploring the forest around the school. Seniors also work in the school forest and the adjoining Lebanon Hills Regional Park. They participate in an overnight Bioblitz. They do a two-week winter survival unit, culminating in a night sleeping in quinzhees that they build on the school site. They hike or bike to Fort Snelling, walk through local communities to study sustainability, and camp at a wind farm.**

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

**In addition to the learning described in question 6, our students learn a different skill set through our Intensive Theme courses. Three times a year, our regular classes stop and students spend 7 class days entirely in an immersion into one topic or place. Some students take local field courses, such as Animal Behavior (taught at the the MN Zoo) Outdoor Photography, or Winter Outdoor Recreation. Some courses are Minnesota field studies in which students canoe and camp in the Boundary Waters, camp and hike on the Superior Hiking Trail, or camp and sail at Lake Pepin. Some courses are extended field studies in other countries: Australia, Peru, New Zealand, etc. In these field studies, students learn about the ecology, culture and environmental issues of the place. In all of these Intensive Theme courses, in Minnesota or abroad, students are fulfilling the mission of SES: to create active citizen leaders who are environmentally informed, self-perpetuating learners connected to the local and global community. Each course places students in the “real world,” and encourages them to interact with community members and professionals to develop communication and leadership skills.**

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

**SES was founded in partnership with the Minnesota Zoo and the City of Apple Valley. Our students work with professionals at the Zoo to study animal behavior, marine biology, and animal management. Students have helped with a variety of conservation projects at the Zoo and in Apple Valley. We have a long-standing partnership with the City of Eagan Water Resources Department; students study Eagan ponds and share that data with the city each fall. We have collaborated on a MN-LCMR grant in conjunction with Eagan to survey local lakes for three summers and report that data to the EPA and another grant with Dakota County for students to inventory plants in Lebanon Hills Regional Park and create interpretive signage for the park to help educate the public. Our students work on projects with professionals at Fort Snelling State Park, the Minnesota Valley Wildlife Refuge, and Valley Natural Foods. Students gain valuable knowledge and experience through all of our partnerships, and also provide valuable service to those partners as we work together to enhance our local environments.**

9. Describe any other ways that your school integrates core environment, sustainability, STEM, green technology and civics into curricula to provide effective environmental and sustainability education, highlighting innovative or unique practices and partnerships. This can also include before and after school, during the summer and other enrichment opportunities. Examples include childcare programs, community education courses, parent education courses, and student green teams, environmental or outdoor clubs. (Maximum 200 words)



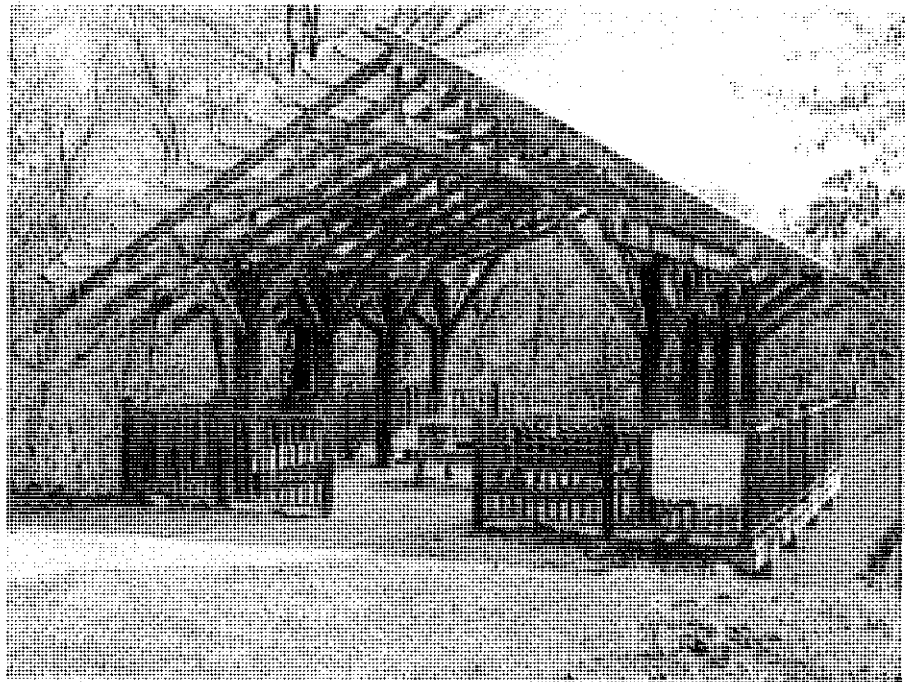
Many of our students gain global perspective through our unique field study opportunities. We have sent a student delegation to three of the last four UN-COP conferences in Copenhagen, Cancun, and Qatar. Students have studied in Bangladesh through the American Youth Leadership Program of the US State Department. Students studied climate change on Baffin Island with Will Steger, and brought students from Baffin Island to our school. Many students have participated in our SES field studies, working with local communities, schools, and experts, learning about environmental issues in places like Costa Rica, South Africa and Iceland. Our students are learning about environmental activism. Student-generated clubs work for environmental causes; for example, we have had our “Green Team” work for Yea! MN through the Will Steger Foundation. The SES Venture Crew works several times a month on the Pilot Knob Prairie Restoration Project in conjunction with Great River Greening. Students and staff have worked for many summers with the Dakota County Wetland Health Evaluation Project and the Vermillion Riverwatch Program.

10. Attach up to 6 photos that document your green school efforts.

**School of Environmental Studies, showing school forest, picnic tables, and birdfeeders**



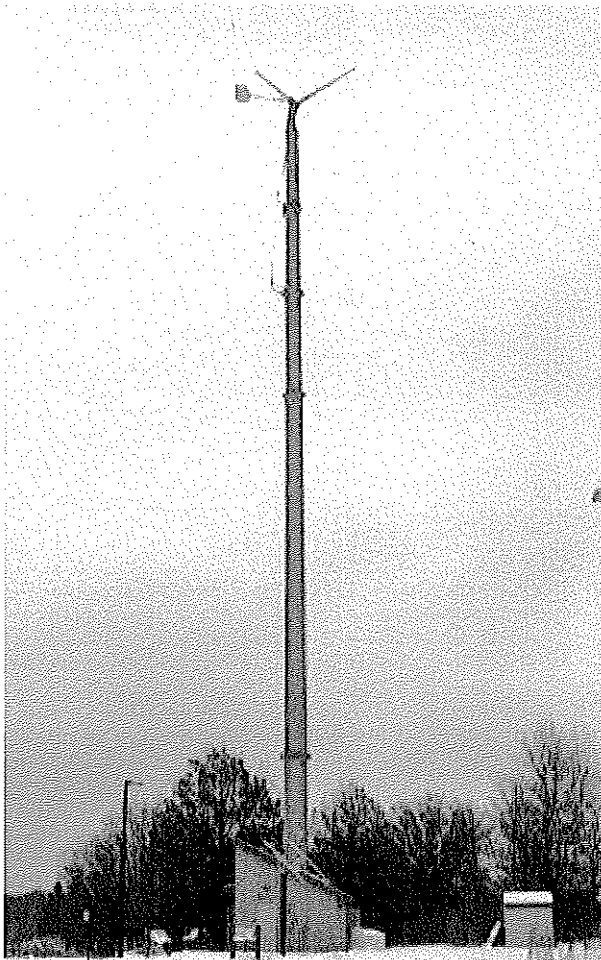
**Outdoor Classroom, made of  
recycled materials**



**Community Garden shared by SES and citizens of Apple Valley**



**Birch Pond with student-designed sign explaining our multi-year restoration project in partnership with the Minnesota Department of Natural Resources**



**Demonstration wind turbine, solar panels, sustainable building with green roof, produced in partnership with Dakota Electric**