



Minnesota
GreenStep Schools

Minnesota GreenStep Schools
Sustainable Best Practices Framework

SUMMARY OVERVIEW

Jonee Kulman Brigham, AIA, LEED O+M
kulma002@umn.edu

Leader of MN GreenStep Schools
Senior Research Fellow, Minnesota Design Center,
University of Minnesota

for Senate Education Finance Committee Hearing - 3/22/23

Presentation

Highlights from
the Hearing Packet
and
supplemental information

HEARING PACKET
FOR MN GREENSTEP SCHOOLS APPROPRIATION
SF2350 (Kunesh) / HF2626 (Hill/Kraft)
March 17, 2023



CONTENTS:

Cover Letter	2
Case Statement	4
What are Green Schools?	4
Need for the MN GreenStep School Program	4
Regional Balance and Equity	5
Importance of School Buildings for Health and Learning	6
Energy Savings Potential in Minnesota Schools	7
Clean Energy Savings Potential in Minnesota Schools	7
Benefits of Green Schools and the GreenStep Program	8
Overall Benefits of GreenStep Programs	8
Benefits to Districts and Schools	9
Benefits to Resource Organizations	10
Interest Map and Statements	11
Support	18
Organizations Expressing Support	18
Support Quotes	18
Testimony Support Letters and Statements	20
Best Practices	26
Connection to State Programs and Goals	29
MN Due North Plan	30
MN Climate Action Framework	31
Funding Comparison	32
Frequently Asked Questions	33

Green Schools

- Improve Environmental Impact & Cost
- Improve Health
- Provide Environmental Education



Minnesota GreenStep Schools Outcome Areas for Best Practices



0. Organizational Leadership



1. Reduced Environmental Impact and Costs



2. Improved Health and Wellness



3. Effective Environmental and Sustainability Education



0. Organizational Leadership

0.1 Green Team: Participating districts and schools form a green team made up of diverse roles and stakeholders.

0.2 GreenStep School Resolution: The district passes a resolution to participate in GreenStep, signed by participating schools.

0.3 Widespread Communication: District/School communicate activities and accomplishments to families, students, staff, and stakeholders.

0.4 Equity And Diversity: District/School Proactively plans for equitable and diverse participation in the program and projects

0.5 Green School Strategic Plan: District/School creates a strategic plan and reviews it annually.

0.6 Community Leadership: District/School contribute their experience to professional and community organizations to foster green school capacity beyond their borders.

0.7 Advanced Recognition: District/School seek advanced recognition through programs like Green Ribbon, LEED, or others.



1. Reduced Environmental Impact and Costs

1.1 Energy Efficiency: District/School has very little wasted energy.

1.2 Clean Energy: District/School uses clean energy sources such as solar panels.

1.3 Waste Reduction: District/School has very little solid waste and recycles a variety of materials.

1.4 Material Safety: District/School has very little hazardous waste and safely manages it.

1.5 Water Efficiency: District/School has very little wasted water indoors and in the school yard.

1.6 Onsite Stormwater Management: Schoolyards include areas that are natural and help rain soak deep into the ground.

1.7 Community Spaces: Schools and schoolyards include areas that the community can use.

1.8 Green Product Purchasing: District/School purchases green products such as recycled office paper, low or non-toxic cleaning supplies, furniture built to green standards, or efficient computers.

1.9 Commuting Efficiency: Many students and staff walk, bike, carpool or bus to school.

1.10 Transportation Efficiency: District/School has efficient transportation use and reduces its environmental impacts.

1.11 Climate Adaptation and Community Resilience: District/School has planned and prepared for extreme weather, adaptation to changing climatic conditions, and has fostered strong community connections.

1.12 Climate Mitigation and Planning: District/School has assessed their greenhouse gas emissions, planned for their reduction, and is taking action toward that goal.



2. Improved Health and Wellness

2.1 Drinking Water Safety: District/School monitors drinking water quality and prevents water contaminants.

2.2 Indoor Air Quality: District/School has programs to protect air quality such as using a strong ventilation standard, a comprehensive Indoor Air Quality Management Program, an asthma management program, and a no-smoking policy.

2.3 Indoor Environmental Comfort: School provides comfortable learning spaces in terms of natural and artificial lighting, temperature, humidity, acoustics (sound quality), window views to nature, furniture and equipment.

2.4 Chemical Safety: School minimizes and manages chemical exposure and handling to protect students and staff from wood preservatives, mercury in devices, pesticides, and other potential hazards.

2.5 Physical Activity: Students have ample physical education or outdoor time during each school day.

2.6 Nourishment Access: District/School provides breakfast and free or reduced lunches as needed to make sure all students are nourished.

2.7 Nutrition: District/School provides nutritious and healthy meals and snacks.

2.8 Sustainable Food: District/School purchases food with green features such as organic, fair trade, or locally grown.

2.9. Health Resources and Planning: District/School has health resources (e.g. a nurse or health aid) and has an overall health plan that includes mental health, positive school climate, inclusivity, equity, and safety.



3. Effective Environmental and Sustainability Education

3.1 Integrated Environmental Education: Environmental education is integrated throughout the curriculum.

3.2 Outdoor Learning: Outdoor learning experiences are provided .

3.3 Teacher Training: Environmental education training is offered to teachers.

3.4. Environmental Career Preparation: The curriculum connects to environmental career readiness.

3.5 Community Projects: Students conduct environmental community engagement projects .

3.6 Community Engagement: The district/school partners with community organizations to advance green school achievement.



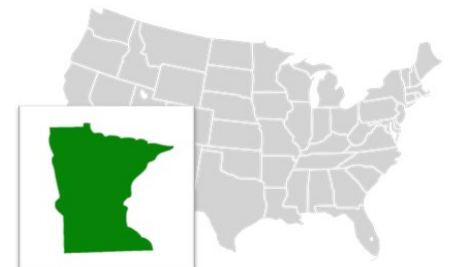
Picture this: *One Step at a Time...*, Teams of Schools, Districts, Students, Parents, and a supporting community of volunteers, non-profits, businesses, and local and state government agencies work together to help schools and their community take actions and build capacity to meet the challenges and opportunities of the future: preparing children for a changing economy, protecting our environment and community health, and harvesting the benefits of a clean energy future—all with guidance, assistance, and recognition from MN GreenStep Schools.

Overview & Features

- Statewide green best practices framework for K-12 schools
- Free and Voluntary
- Challenge, assist, and recognize school greening
- Beginner-friendly step-by-step "on-ramp" to school greening
- Consistent metrics to simplify process & allow statewide tracking
- **Based on:**
 - **Delivery model of MN GreenStep Cities**
 - **Performance areas of Green Ribbon Schools**
 - **Research on emerging best practices and regional stakeholder needs**
- Connects existing programs and expertise with schools rather than reinvent or compete
- Higher performance schools in program to be comparable to Green Ribbon or LEED



U.S. DEPARTMENT OF EDUCATION





ENERGY AND WATER SAVING

Sustainable schools use **33% less energy** and **32% less water** than conventionally constructed schools.

(Greening America's Schools, 2006)



ESSENTIAL SKILLS

Green Learning enables students to develop **essential new skills**, knowledge and solutions-focused thinking necessary to adapt to the impacts of climate change. Stanford Researchers found that **83%** of academic literature reported **better environment-related behaviors** as a result of environmental education.

(NAEE and Stanford University, 2016)



STAFF RETENTION

Green schools see approximately **74% improvement** in the ability to attract and retain teachers.

(Greening America's Schools, 2006)



DIRECT IMPACT

Schools could **meet 75% of their electricity needs** and **reduce the education sector's carbon footprint by up to 28%** by taking advantage of all viable space for solar panels.

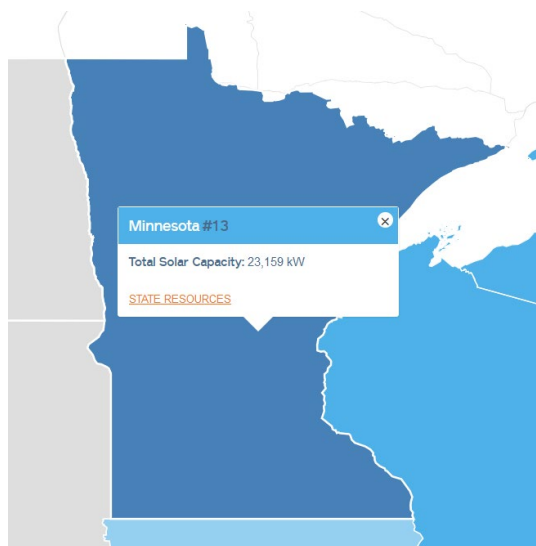
(Solar PV as a mitigation strategy for the US education sector, 2019)

Energy, Cost, Climate

Minnesota public schools have been benchmarked in the State of Minnesota's B3 Benchmarking tool. The 1,522 schools that have been benchmarked spend \$167 million in energy bills. Sixteen percent of the schools are using significantly more energy than the benchmark and show a potential energy savings of \$17 million per year if they were retrofitted to the current state energy code.

Sector / Org	Total SF	Total Bldgs	Potential Improve. Bldgs	Bldg %	Potential Improv. SF	SF %	Total Usage (MMBTU/YR)	Potential Savings (MMBTU/YR)	Total Dollars (\$/YR)	Potential Annual \$ Savings
Public Schools	163,379,026	1,522	237	16%	25,837,894	16%	11,492,121	1,925,330	\$167,900,773	\$17,615,000

Table image from Willdan which operates B3 Benchmarking



According to the Generation 180 Report, Minnesota schools rank #13 with a Total Solar Capacity of 23,159 kW.

- *“Nearly 1 in 10 Public Schools Has Solar”*
- *“Since 2015, the amount of solar installed by K-12 schools has TRIPLED”*
- *“If all U.S. K-12 schools were 100% powered by solar, they would offset the carbon dioxide emissions each year of 16 coal-fired power plants.”*

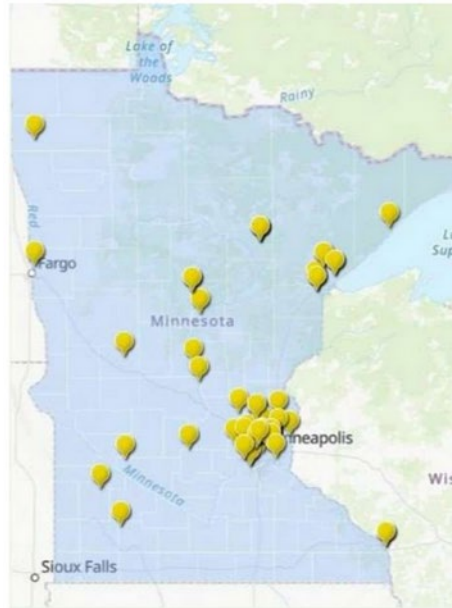
<https://generation180.org/brighter-future-2022/>

Interest in the Minnesota GreenStep Schools Program

Through November 2022, one or more contacts at **15 school districts, 36 schools, and 44 resource organizations** throughout Minnesota have expressed interest in the [Interest Form](#).

*After years of working with partners and stakeholders, the MN GreenStep Schools pilot version launched in 2020 and has gained interest across Minnesota. **As of November, 2022 one or more contacts at 15 school districts, 36 schools, and 44 resource organizations throughout Minnesota have expressed interest in the pilot program, --many more than can be effectively supported with current 10% FTE staffing from interim funding.***

*As a free, voluntary program, a fully funded MN GreenStep Schools can help **level the green school playing field** so that all schools (independent of region or resources) can enjoy the benefits of green schools--improved learning, health, efficiency, and environmental quality.*



Interest from Contacts at:

MN School Districts:

La Crescent-Hokah (ISD 300)
Minneapolis Public Schools (ISD 1)
Moorhead Area Public School (ISD 152)
Pequot Lakes Public Schools (ISD 186)
Prior Lake-Savage Area Schools (ISD 719)
Roseville Area School District (ISD 623)
Royalton School District (ISD 485)
Saint Paul Public Schools (ISD 625)
Shakopee Public Schools (ISD 720)
Spring Lake Park Schools (ISD 16)
Stillwater Area Public School District (ISD 834)
Wayzata Public School District (ISD 284)
West St. Paul-Mendota Hts.-Eagan (ISD 197)
Wrenshall Public School District (ISD 100)
Yellow Medicine East (ISD 2190)

MN Schools:

Andover High School
Bellaire Education Center
Carlton High School
City of Lakes Waldorf School
Discovery Woods Montessori
Eisenhower Elementary
Forest Lake Area High School
Garlough Environmental Magnet School
Harbor City International School
Heritage E-Stem Magnet School
Hiawatha Collegiate High School
Hidden Oaks Middle School
Hilltop Primary School
International Spanish Language Academy (ISLA)
Jie Ming Mandarin Immersion Academy
(a St. Paul Public Immersion School)
La Crescent-Hokah Secondary School
Little Canada Elementary
Lyndale Community School PTO
Mendota Elementary School
Moreland Arts and Health Sciences Magnet Elementary
Northern Lights Community School
Pike Lake Elementary
Pine Bend Elementary
Prairie Seeds Academy
Rockford Middle School-Center for Environmental Studies
Sartell Middle School
Scandia Elementary School
Shakopee West Middle School
Saint Francis Xavier Elementary School
St Paul Conservatory for Performing Artists
St. Stephens Catholic School
Somerset Elementary School
The Blake School, Northrup Campus
Westbrook-Walnut Grove Secondary
William M. Kelley School
Wrenshall High School

Other State Programs



Connect with the Movement

Explore Data

Cultivate Sustainability

Recognition & Stories



Green & Healthy Schools Wisconsin by the numbers

Schools

2,260

Public, Private, and Early Learning Centers

School Partnerships

726

Schools working with at least one Provider

Recognized Schools

283

Sprout, Seeding, Sapling, Sugar Maple, & Green Ribbon

Active Contributors

291

Request an account to contribute your school's data

Explore Data Cultivate Sustainability Recognition & Stories



'20-'21 Schools by Survey Level

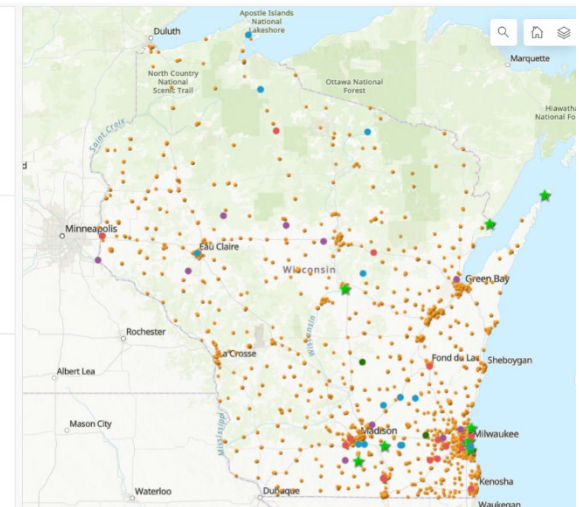
- Seedling
- Sapling
- Sprout
- Sugar Maple
- Green Ribbon
- Other

'20-'21 Private school and ECE Survey submissions

- Seedling
- Sapling
- Green Ribbon

Schools working with partners (2019 Data)

- Other



Other State Programs



Sustainable Jersey for Schools Certification Program

64%

of New Jersey public school districts are participating

1083

Participating Schools

354

Certified Schools

7,861

Actions Approved

306

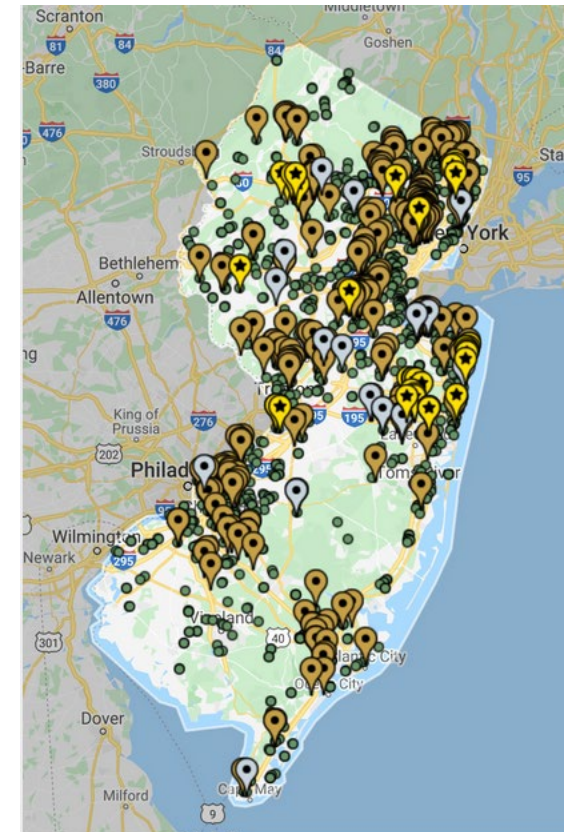
Bronze Certified

48

Silver Certified

43

Digital Schools Stars



Other State Programs



Karen B. Salmon, Ph.D.
State Superintendent of Schools

FOR IMMEDIATE RELEASE:

CONTACT: Lora Rakowski, 443-797-9883

MARYLAND GREEN SCHOOL PROGRAM GROWS TO 656 SCHOOLS

Certified Green Schools Conserve Energy and Water, Reduce Waste and Protect Environmental Resources

BALTIMORE - (June 5, 2020) – The Maryland Association for Environmental and Outdoor Education (MAEOE) announced the 2019-20 Maryland Green School designees, which grows the Maryland Green School Program to 656 schools strong. This year's designees include an additional 46 new Maryland Green Schools, 86 schools with recertified Maryland Green School status, as well as 18 schools that achieved “sustainable” Maryland Green Schools status for participation in the program for 14 years. The Green School Program award represents a school-wide commitment to environmental literacy that includes staff, students, and the community. Maryland Green Schools are part of a national and international community working to create a more sustainable future.

Maryland Green Schools, in 2019-20, achieved remarkable environmental accomplishments. They saved 648,415 gallons of water; reduced energy use by 2,157,757 kwh; recycled 1,729,076 pounds of material, preventing waste from going to a landfill; created 25,961 square feet of natural habitat; planted 3,203 native plants, including shrubs and trees; and cleaned 86,197 square feet of streambanks to protect the State's water quality.



Source:
<https://news.maryland.gov/msde/maryland-green-school-program-grows-to-656-schools/>

Testimony Support Letters and Statements

Holly Swiglo, Ivy Song, and Emilia Gusdal

Seniors at Roseville Area High School

Leaders and Founders of Roseville Area High School Students For Climate Action

*SUPPORT LETTERS
EXCERPTS – See
Hearing Packet for Full
Letters*



“Many young people today deal with climate anxiety - struggling to find hope while witnessing an apparent lack of action amidst catastrophe. When students see their schools take action to reduce their environmental impact, it inspires them. It teaches them to care for the environment - a value they will keep with them throughout the rest of their lives.”

“As student activists, we have faced many challenges, but through it all, our friends at MN GreenStep Schools have been some of the most supportive people in our network. MN GreenStep Schools brings us hope for a better world. In a time of environmental despair, there is nothing we need more.”



March 15, 2023

As the 2023 president of the American Institute of Architects Minnesota, which represents more than 2,300 architecture and design professionals throughout the state, I am writing in support of the SF2350 (Kunesh)/ HF2626 (Hill/Kraft) bills for an act relating to education finance; appropriating money for the Minnesota GreenStep Schools program.

Architects and developers have seen many positive impacts in communities that have implemented GreenStep programs. The GreenStep model gives cities a path to make significant progress on sustainability issues in a clear, incremental model. Resources are made available to help GreenStep cities succeed, and this program takes GreenStep to another constituency that can make significant strides in reducing their climate impact.

Expanding from a pilot to a fully-funded program will also expand the reach of the program to communities that may not have the resources to compete for a spot in a pilot program, but could benefit significantly from the guidance and roadmap GreenStep schools provide.

Helping the next generation of Minnesotans embrace sustainability in their schools will help them embrace it throughout their lives. We urge you to fund the GreenStep Schools program fully for our future.

Sincerely,

A handwritten signature in blue ink that reads "Sam Olbekson".

Sam Olbekson, AIA, AICAE, NOMA
President, AIA Minnesota
Founder and CEO, Full Circle Indigenous Planning + Design

March 14, 2023

To the Chair and Members:

I am writing as a Minnesota constituent, a PTA officer, and a clean-energy architect and executive to share Willdan's support for Minnesota's GreenStep Schools program in SF2350 (Kunesh)/HF2626 (Hill/Kraft). The U.S. economy is currently decarbonizing. By funding the GreenStep Schools program, Minnesota can continue as a leader in the clean energy arena and prosper for years to come.

Schools are at the heart of our communities. They demonstrate to our youth what our values are and prepare them for the future. The GreenStep Schools program will promote energy efficiency, renewable energy, and sustainability to benefit our communities across Minnesota in a myriad of ways.

Green schools:

- Are healthier for students and promote learning
- Reduce the energy costs paid by school districts, freeing up educational resources to directly benefit students
- Promote the knowledge, skills, and growth opportunities needed to support a decarbonized economy

My division of Willdan was founded as The Weidt Group in 1979, in Chaska, Minnesota, with a focus on sustainable and energy-efficient design. Minnesota policies that required utility companies to invest in energy efficiency were instrumental in our growth from a handful of architects to a major national energy efficiency firm. Those policies also enabled us to take our Minnesota-grown expertise across the Midwest to California, the Carolinas, and 10 other states. As a result, our division expanded from 60 to 120 people in the last four years—with half of those employees residing in Minnesota.

I believe that the GreenStep Schools program will benefit our schools and students, allow Minnesota to continue as a national leader in the clean energy economy, and will support job creation, which is critical to Minnesota's future.

Respectfully submitted,



Chris Baker, AIA, PE | Project Executive
WILLDAN GROUP, INC.

“Schools are at the heart of our communities. They demonstrate to our youth what our values are and prepare them for the future.”

“I believe that the GreenStep Schools program will benefit our schools and students, allow Minnesota to continue as a national leader in the clean energy economy, and will support job creation, which is critical to Minnesota's future.”

March 9, 2023

To: State of Minnesota Legislators

From: Tom Fisher, Director



Re: GreenStep Schools

I write in strong support of GreenStep Schools as a critical part of ensuring the Minnesota's preparation for the fast-growing green economy.

The green economy is one of the fastest growing parts of the American economy and preparing the students of Minnesota for that future is critical to their success and the economic health of the state.

GreenStep Schools is an innovative program to achieve that goal. It creates a one-stop shop that integrates the many one-off efforts to green schools, which are admirable attempts but uncoordinated and less effective as a result.

This program will take what has worked so well at the municipal scale in GreenStep Cities into our schools, where students can acquire the skills they will need in order to thrive in the future.

It will be transformative for Minnesota's schools and its students. It offers a win-win-win solution to several challenges. It will help us educate students about energy conservation, it will help schools save energy, and it will enable communities to prepare from a promising economic future.

I urge your support of GreenStep Schools.

“The green economy is one of the fastest growing parts of the American economy and preparing the students of Minnesota for that future is critical to their success and the economic health of the state.”

“This program will take what has worked so well at the municipal scale in GreenStep Cities into our schools, where students can acquire the skills they will need in order to thrive in the future.”

March 9, 2023

To: Minnesota Legislators as You Consider Supporting GreenStep Schools

Dear Chairs and Members,

I write in strong support of funding the expansion and development of the Minnesota GreenStep Schools program, which follows the successful example of the Minnesota GreenStep Cities voluntary best practices and recognition model. We urgently need more students to get involved with hands-on projects, as they will with GreenStep Schools, to spark their interest in working on energy transition and sustainability jobs. Research by Clean Energy Environment Minnesota's shows clean energy jobs are growing at or faster than other sectors in the state, and we know that the Inflation Reduction Act will spur even more growth. Education research shows that hands-on experiences drive student learning and shape their career ideas.

“I know that a GreenStep approach works, from my own experience. In 2009, while I was serving on the city council in Falcon Heights, our city became a pilot in the then-new Minnesota GreenStep Cities program. The program gave us the impetus to raise our environmental ambitions.”

I have gotten to know many K-12 educators across the state through my work at the University of Minnesota, as we collaborate on putting in place new sustainability and energy transition curricula for our students. Sharing the latest resources for school greening activities and curriculum is something that will help expand and accelerate progress.

Beth Mercer-Taylor

Sustainability Education Co-Director, Institute on the Environment, University of Minnesota
City of Falcon Heights Environment Commission Chair

UNIVERSITY OF MINNESOTA

Twin Cities Campus

*Department of Organizational Leadership,
Policy, and Development
College of Education and Human Development*

206 Burton Hall
178 Pillsbury Drive S.E.
Minneapolis, MN 55455
Phone: 612-624-1006
Fax: 612-624-3377
E-mail: olpd@umn.edu
Website: <http://www.cehd.umn.edu/olpd>

Bhaskar Upadhyay, Professor, College of Education and Human Development,
University of Minnesota

Re: Legislative Testimony
SF2350 (Kunesh)/ HF2626 (Hill/Kraft)

Dear Chair and Members,

I am writing in support of the SF2350 (Kunesh)/ HF2626 (Hill/Kraft) bills for an act relating to education finance; appropriating money for the Minnesota GreenStep Schools program. I am Bhaskar Upadhyay, a Professor of STEM Education and Comparative International and Development Education at the University of Minnesota in Twin Cities. My work is built on providing STEM teachers with the best pedagogical resources, materials, and skills so our students get the best education they deserve. Additionally, I explore how the 21st Century STEM education best prepares our students to tackle the most challenging and gnarly questions related to the environment that would benefit the community at large. We urgently need programs that push our students to reflect on our actions and their potential implications for them as individuals, their families, their communities, and beyond.

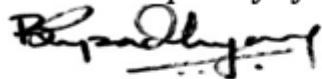
In this regard, GreenStep Schools Program provides this new space for our rural, suburban, and urban schools to support our students to broaden their engagement with STEM and non-STEM fields for a healthy climate. Furthermore, this program could act as a pivotal layer to encourage students to examine the local and global issues related to energy security, food security, water security, and many other issues by utilizing STEM ideas learned in STEM classrooms. These extended interactions have great potential to build critical thinking skills and narrow the achievement gaps among our students. According to the 2019 report titled “Statewide Crisis: Minnesota’s Education Achievement Gaps,” published by the Federal Reserve Bank of Minneapolis, the achievement gaps in math, science, and language are persistent and affect rural and urban communities equally. GreenStep Schools Programs could be a potential partner in narrowing this perennial gap.

GreenStep Schools Programs can work with schools and the community to bring additional curricular and other resources to build more hands-on and minds-on activities and locally relevant contents that makes learning relevant. In addition, GreenStep Schools Program promotes youth-led activities and actions based on community needs benefitting both the students and the community. GreenStep Schools Programs is also a repository space where stories of youth-led activities and actions are collected and shared across the Minnesota schools. These stories then become exemplars and models for other schools and youths to lead their own activities based on their local community environments. Therefore, the program could be an excellent opportunity to build leadership capacities in our youths from an early age. In Minnesota, we need youth leaders who later become climate leaders for the wellbeing of Minnesota and its communities.

I strongly support the GreenStep Schools Program because it has the potential to contribute to a brighter future for the students of Minnesota and its communities. I sincerely request the honorable members of this committee to support this program.

Thank you for your time and consideration.

Bhaskar Upadhyay

A handwritten signature in black ink, appearing to read 'B. Upadhyay', with a horizontal line underneath.

Bhaskar Upadhyay, Ph.D.

Professor

Comparative International Development Education

STEM Education



Minnesota
GreenStep Schools

Minnesota GreenStep Schools
Sustainable Best Practices Framework

www.mngreenstepschools.org

Contact

Jonee Kulman Brigham, AIA, LEED O+M
kulma002@umn.edu

Leader of MN GreenStep Schools
Senior Research Fellow, Minnesota Design Center,
University of Minnesota